

# 2023

## Furbearer Program Annual Report



**Missouri Department of Conservation**

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## Welcome Letter

The Missouri Department of Conservation's Furbearer Program works to monitor and manage the state's furbearing species for the sustainable harvest by hunters and trappers, as well as for the enjoyment of outdoor recreationalists from Missouri and around the country. This is done with the help of the state's hunting and trapping community, volunteers who help run surveys and report sightings, and the financial support received from the one-eighth of one percent Conservation Sales Tax, permits sales and income generated by the fish and wildlife tourism. Missouri is fortunate to have a wide range of furbearing species. From the charismatic larger mammals like coyotes and bobcats to the small and rare long-tailed weasel, our natural areas contain many furbearers for us to enjoy.

We would like to thank everyone who has helped us in our efforts. Last year, bow hunters recorded furbearer sightings for over 36,000 hours to help compile our Archer's Index. We received reports of sightings of rare furbearer sightings of badgers, least weasels, long tail weasels, and mountain lions. Volunteers helped us with our state-wide Sign Station Surveys. Hunters and trappers provided teeth from harvested bobcats and otters to help monitor the populations.

With everyone's cooperation, we can enjoy seeing and harvesting our furbearing species in the state for generations to come.

Thank you!

-Missouri Department of Conservation Furbearer Program

## Annual Highlights

- 🐾 Over 90 genetic samples were collected from bobcat mandibles (that were submitted as part of our age-at-harvest study) to be included in a Midwest bobcat genetic study. The results of this study are aimed at evaluating the genetic variation in Midwest bobcat populations.
- 🐾 The ongoing mesocarnivore camera trapping study's final field season started in the fall of 2023, with hopes of detecting more spotted skunks and gray fox, to help build distribution models for the two species and help design a statewide mesocarnivore monitoring plan. In addition, new camera trap boxes were built to test if they can help increase detection rates of weasels and spotted skunks.
- 🐾 A new record-weight furbearer was harvested during the 2023-2024 season, a nutria from New Madrid County that weighed 19.69 lbs.
- 🐾 There are now over 120 confirmed mountain lion sightings across the state. Mountain lion information is no longer included in this annual report, but is provided along with general information about mountain lions on the MDC website ([Mountain Lion Reports | Missouri Department of Conservation](#)).
- 🐾 Black bear information is no longer included in this annual report either, but information about current monitoring and management activity can be found in our newly established Black Bear Annual Report on the MDC website ([Black Bear Management in Missouri | Missouri Department of Conservation](#)).
- 🐾 There were no new wolf confirmations during this reporting period.
- 🐾 Check the Department website for additional updates on projects and sightings.

## Introduction

**Missouri's wild fur market** has been monitored annually since 1940, with some information dating back to 1934. Over time, tremendous fluctuations in the harvest of Missouri's primary furbearing species have been observed as both market and social trends changed. The Missouri Department of Conservation (MDC) monitors the fur market within the state using mandatory fur dealer transaction records, mandatory pelt registration of bobcats (since 1980) and river otters (since 1996), and information gathered at fur auctions. The information in this report is based on the harvest by both trappers and hunters.



The number of Fur Dealer Permits issued by MDC peaked at 1,192 during the 1945-46 trapping and hunting season. In 2023, MDC issued **21 Resident Commercial Fur Buyer Permits**, 8 less than was issued in 2022, and **4 Non-Resident Commercial Fur Buyer Permits**, 3 less than were issued in 2022.



Permits to harvest Missouri furbearers by trapping methods were first required in 1953. The number of issued Resident Trapping Permits peaked during 1980-81 at 13,248 and reached an all-time low in 2000-01 at 2,050 permits issued. During the 2022-23 trapping season, MDC issued 8,736 Resident and 436 Non-Resident Trapping Permits. That is over 700 more resident permits issued than the previous year and is at least the third year in a row that we have seen increases in annual trapping permits sold.

The highest peak of total pelts harvested reached 834,935 in 1940-41 (over 70% were opossum and skunk pelts) and reached the second highest peak in 1979-80 at 634,338, when average raccoon pelt values were estimated at \$27.50. The economic value of harvested fur also peaked in 1979-80 when \$9 million worth of pelts were sold. Pelt values declined dramatically during the late 1980s and through the mid-1990s. As a result, the number of participants also fell to all-time lows. Despite a small peak in the fur market in the mid 2010's, the international fur market is at

an all-time low due to declining prices, the disruptive Covid-19 pandemic, and the resulting world-wide recession. Even with recent downward trends in trapping, the 2022-2023 trapping season saw 29,714 animals harvested which is a 34.99% decrease compared to the 2021-2022 trapping season (45,710) and a 36.37% decrease from the 2020-2021 trapping season (46,695).



In Section two, we break down trends in observation of each species based on the results from annual sign stations and archer indices. The use of long-term data sets allows for the comparison from year to year and more importantly the long-term trend of each species. In addition, we provide range maps and recent sightings of our rare furbearer species.

For more information about this report or about the furbearer species mentioned, please contact Nate Bowersock at [Nathaniel.Bowersock@mdc.mo.gov](mailto:Nathaniel.Bowersock@mdc.mo.gov) or visit [www.mdc.mo.gov](http://www.mdc.mo.gov).



## **SECTION I: Annual Furbearer Monitoring Methods**





## Fur Harvest and Auction Price Comparisons

Individuals interested in buying or selling fur in Missouri (i.e., fur dealers) must obtain a commercial permit from MDC. Permit requirements include maintaining and submitting records of all fur transactions (e.g., buying, selling, retaining inventory, etc.). Data collected from fur dealers provide MDC an estimate of furbearer harvest. Additionally, bobcat and river otter harvest numbers are gathered from mandatory pelt registration and tagging, as required by CITES for export outside the United States.

**The Missouri Trappers Association (MTA)** hosts fur auctions each year in the state of Missouri, providing opportunity to buy or sell harvested pelts. In the 2022-23 season, MTA hosted just one



auction in February.

Pelt prices are averaged from all fur sold, including green, finished, and

damaged furs. This year's MTA auction prices saw some species increase in price while others decreased in price (Table 1).



Overall, average pelt prices increased by about 4.9% from last year (Table 2). All species except for raccoons, opossums, coyote, muskrats, and gray fox showed an increase in average pelt prices. The largest gain in price from the previous year were bobcats, that went from \$46.01 in 2022 to \$90.53 in 2023 for an increase of 96.8%. Fur auction prices are closely monitored because, as seen in each furbearer status, fur harvest closely correlates with fur prices set at auction. Although these increases will be good for trappers, the overall fur market remains down significantly from its peak with no immediate changes in the future.

**Table 1.** Furbearer harvest and pelt prices in Missouri 2020-2023.

Species	2022-23		2021-22		2020-2021	
	Pelts sold <sup>1</sup> or registered*	Pelt Prices from MTA Auctions <sup>2</sup>	Pelts sold <sup>1</sup> or registered*	Pelt Prices from MTA Auctions <sup>2</sup>	Pelts sold or registered*	Pelt Prices from MTA Auctions
Raccoon	11,196	\$1.53	19,770	\$3.33	21,589	\$4.46
Opossum	884	\$2.05	689	\$2.91	949	\$1.52
Muskrat	4,908	\$3.35	11,273	\$4.61	8,256	\$3.62
Coyote	1,997	\$7.52	5,841	\$10.75	6,790	\$20.50
Beaver	6,707	\$12.51	4,555	\$8.14	4,457	\$8.79
Mink	985	(m) \$10.67 (f) \$7.00	345	(m) \$8.28 (f) \$7.00	203	(m) \$7.00 (f) \$0
Red Fox	572	\$14.72	436	\$11.24	402	\$11.53
Gray Fox	723	\$16.09	216	\$19.90	213	\$15.67
Striped Skunk	306	\$11.34	222	\$10.41	233	\$8.42
Badger	7	\$26.11	18	\$25.00	29	\$15.50
Bobcat*	793	\$90.53	1,314	\$46.01	2,065	\$43.55
River Otter*	636	\$30.47	1,031	\$27.97	1,509	\$15.59
Trapping permits issued	9,822		8,410		8,097	

<sup>1</sup> Number of pelts sold is based on reports received from 36 Fur Dealer Permittees.

<sup>2</sup> Pelt prices are averaged from all fur sold, including green, finished, and damaged furs.

\* Bobcat and River Otter harvest numbers are based on CITES registration.

**Table 2.** Furbearer pelt prices in Missouri from the annual **Missouri** Trappers Association Fur Auction, February 18, 2023, Montgomery City, Missouri.

Species	2023 Summary		Change from 2021-2022	Change from 2012-2013 (Peak)	5-year average (2017-2022)
	Total Sold	Avg. Price			
Raccoon	1,055	\$1.53	-54.1%	-84.0%	\$3.16
Opossum	223	\$2.05	-29.6%	132.8%	\$2.01
Muskrat	893	\$3.35	-27.3%	-60.9%	\$3.79
Coyote	177	\$7.52	-30.0%	-51.7%	\$13.03
Beaver	567	\$12.51	53.7%	-62.5%	\$10.72
Mink	16	\$8.84	15.7%	-68.2%	\$8.09
Red Fox	50	\$14.72	31.0%	-71.3%	\$14.54
Gray Fox	31	\$16.09	-19.1%	-42.7%	\$15.90
Striped Skunk	66	\$11.34	8.9%	220.3%	\$8.84
Badger	1	\$26.11	4.4%	6478.9%	\$25.34
Bobcat	92	\$90.53	96.8%	-60.2%	\$67.13
Otter	171	\$30.47	8.9%	-67.3%	\$28.09

\* Change in Badger pelt price is artificially inflated because average pelt price in 2012-2013 was \$0.38 and very few pelts were sold.

## Furbearer Sign Station Survey

Beginning in 1977, annual sign station surveys for furbearers have been conducted each September and October. The purpose of the survey is to collect population trend information for Missouri's furbearing species. Twenty-five routes are distributed throughout the state in 25 different counties. Routes consist of 5 segments with 10 sign stations per segment for a total of 50 stations per route. Each sign station is a 36-inch diameter circle of sifted soil, spaced 0.3 miles along gravel road shoulders. A fatty acid scent disc is placed in the center of each station as an attractant. Each station is operated for one night and evaluated the following day for visitation.

Each station is described as operable or inoperable by the observer, stations with tire tracks or those destroyed by a road grader were deemed inoperable. All operable stations were included in calculations of indices, regardless of track presence, but inoperable stations were not used for calculations. Tracks were identified within the 36-inch circle of the station. Occupancy of a station by a species was recorded, but not the number of individuals per species.



An example of a sign survey station.



Striped skunk tracks found in a sign.

A total of 24 routes out of 25 (Figure 1) were completed in 2023 with a total of 1,013 operable stations out of a possible 1,200 stations. Fair weather in September and October allowed many of the surveys to be complete before inclement weather set in November. The most common species to visit stations were raccoons, opossums, coyotes, and deer which is similar to our results from previous years (Figure 2). The least common were weasels, minks, muskrats, and bobcats. Non-mammalian visitors were primarily birds, such as crows and turkeys. Species specific population index trends from 1977 to 2023 based on the

Furbearer Sign Station Surveys and other monitor efforts are displayed in Figures 6 through 28. Most furbearers had an overall increasing trend except for red and gray fox populations, which have been in an overall decline since the initiation of the Sign Station Survey (Figures 6, 10, 14, 20, 21, 24, 28). These trends are also reflected in the Bowhunter Observation Index and harvest records. Compared to last year's survey results, this year saw an increase in bobcat visits per 1000 operable stations (Figures 28). Raccoon, skunk, bobcat, and opossum visits increased slightly (Figures 6, 10, 24, 28). Coyotes saw a decrease in detections (Figure 14) and both species of foxes saw slight decreases (Figure 20 and 21). We have seen a decline in the number of visits by bobcats over the last 10 years; however, the overall trend is still positive. Small mammal populations frequently see year to year changes depending on variables such as food abundance, predator population size and many other ecological variables. For management purposes, the long-term trends are the main indicator of a population's stability and there are no signs of alarming drops in these species.

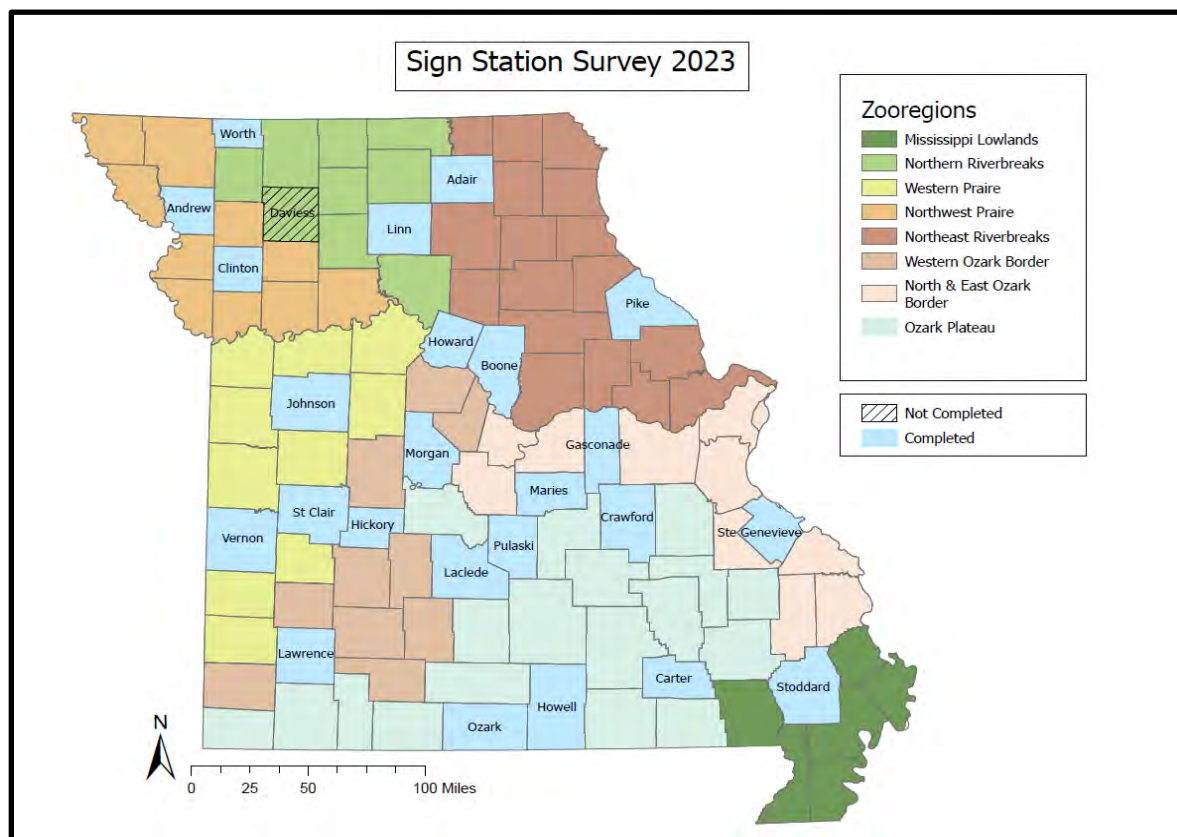


Again, this year, volunteers greatly assisted MDC staff to complete the surveys, and we want to say thank you to all of our volunteers. Missouri Master Naturalists completed with four county surveys. Also, students from several universities helped with surveys: Northwest Missouri State University Wildlife Club - Worth and Andrew Counties, College of the Ozarks - Ozark County, Missouri Western State University Wildlife Society - Clinton County, University of Central Missouri - Johnson County, and University of Missouri - Boone County.

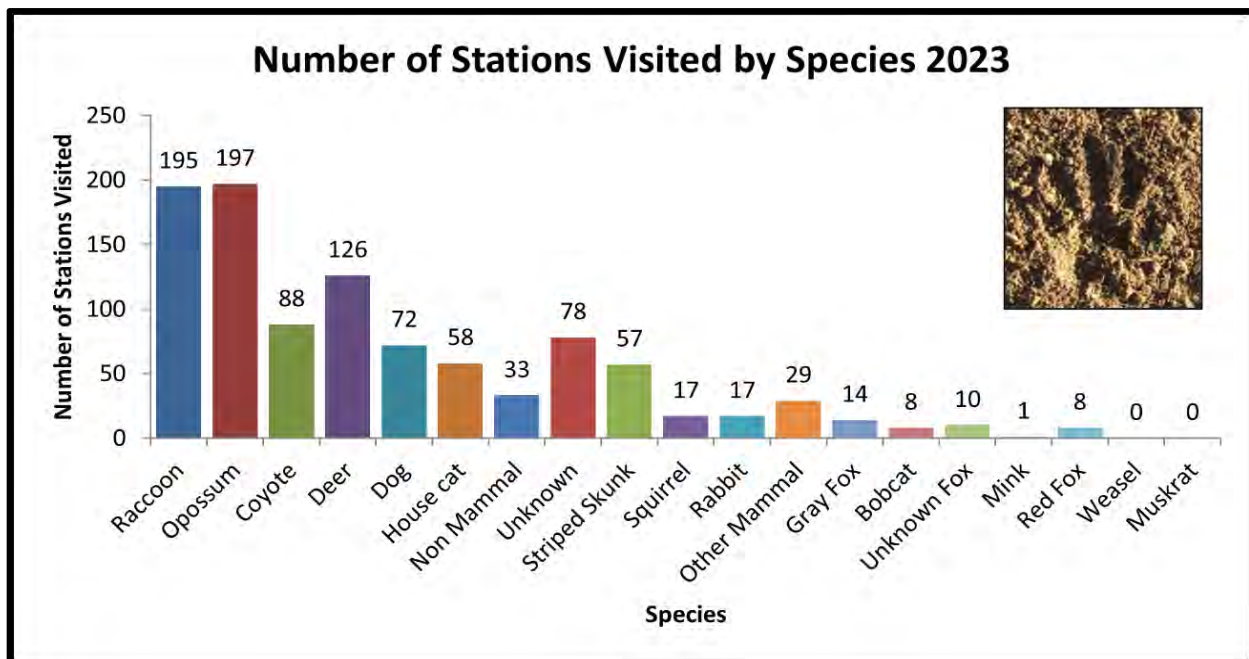
An online training as well as in person training were provided to give specific instructions and provide wildlife track identification training. Volunteers were able to observe bobcat and fox prints along with more common species like raccoon and opossum. After volunteers first assisted in surveys in 2019, the expansion to use more volunteer help has greatly reduced the pressure on MDC staff to complete this large-scale survey. Their help has been greatly appreciated and we expect to continue to use volunteer help in future surveys.



University of Missouri TWS volunteers inspect a sign station survey for detections.



**Figure 1.** The number of stations visited by each mammal species, including non-furbearer species, out of 1,072 operable stations in the 2022 Missouri Furbearer Sign Station Survey.



**Figure 2.** Missouri's 8 zoological regions and counties where data were collected (blue); all counties with permanent transects were surveyed in 2021, except Johnson, Laclede and Ozark counties.

## Archer's Index of Furbearer Populations

**Missouri Department of Conservation** has conducted annual surveys of wildlife populations via the Bowhunter Observation Survey for 40 consecutive years (1983-2023). Each fall, several thousand archery deer and turkey hunters keep daily observation records of furbearers, other small game animals, deer, and turkeys. Archers volunteer through post-season surveys that are advertised in articles in the *Missouri Conservationist* magazine, during sign-ups at bowhunter club meetings and at other outdoor events. Archery hunters are asked to record the number of hours hunted, during both morning and evening hunts, and to use a standardized daily diary to record hours and sightings of wildlife. MDC uses the number of sightings of each species divided by the total number of hours hunted statewide to calculate a sighting index which is expressed as sightings per 1,000 hunter hours, called the Archer's Index.



Wildlife population indices calculated from archers' diaries are useful trend indicators for terrestrial wildlife species, such as coyotes, raccoons, foxes, and bobcats. Hunters are well distributed statewide with volunteers in all counties during most years. Bowhunters averaged 57,239 hours per year in the stand over



the last 39 years and ranged from 30,990 hours in 1985 to 98,898 hours in 2017 (See Appendix A). In 2023, hunters spent **36,204 total hours** in the stand.

Line graph representations of Archer's Indices for several furbearer species are shown in Section II by species. Based on these indices, long-term raccoon, coyote, and opossum observations suggest population increases. Striped skunk and bobcat populations are relatively steady, while observations suggest a downward trend for red and gray fox populations. Wildlife population indices are also depicted by county in Appendix B.

## Monitoring and Demographic Assessment of River Otters and Bobcats in Missouri



**River otter and bobcat** are commonly sought-after furbearers in Missouri and there are no harvest level restrictions on either species. Various population indices suggest these species are not in danger of being over harvested. However, both bobcats and otters are CITES listed species, as their furs resemble other exotic endangered species, which has resulted in challenges being brought up to their harvest regulation in several states. The MDC began a research project to document the sex and age of harvested

animals and measure harvest effort by trappers for these species. These and other data will enable MDC to utilize Statistical Population Reconstruction (SPR) to generate abundance estimates and measure the impact of harvest and regulations on river otter and bobcat populations. Through SPR, the MDC will have a better understanding of the relationship between harvest rates and demographics of each species and will be able to better support current harvest regulations if challenged in the future.

In order to utilize SPR, MDC collects information on harvested river otter and bobcat through mandatory registration and voluntary tooth submission. Trappers are asked to remove one of the lower canine teeth from each river otter and bobcat they harvest so that age-at-harvest can be determined. Sex, date of harvest, method, and effort are collected when river otter or bobcat are tagged or registered with the Department.

A total of 297 lower canine teeth from the 2022-2023 harvest season and several teeth from previous harvest seasons (not depicted below) were collected and have been analyzed from both river otters and bobcats and sent for age analysis.



## River Otter Pilot Project

The Missouri Department of Conservation's Furbearer Program started testing a new transmitter purposefully built for tracking river otters, along with survival and harvest rates, using a GSM (Global System for Mobile Communication) transmission system (or transmitter). GSM transmitters are traditionally used in conjunction with a GPS capable device (such as a cell phone or tracking collar) to offload GPS locational data through cellular towers. In the case of this pilot study, the GSM transmitters are being used to offload cell tower signal strength data instead of GPS data, which is paired with tower location data to ascertain the coarse scale movement data of the otter and determine potential mortality events of marked animals. River otters cannot be fitted with GPS tracking devices for long term tracking because GPS devices require external components to link with satellites and due to otters' ability to reach most parts of their bodies, they are known to removed external tracking devices through daily preening events. Thus, the only way to track otters for a long period of time is through surgically implanted radio tracking transmitters. The objective of this project is to test whether a GSM transmitter can be used to track otters similar to a GPS device that would alleviate the need for field crews to physically track otters on a regular basis, substantially reducing field time for technicians. To be able to still locate marked otters, radio transmitters were paired with GSMs so the locations of marked animals could be obtained to test the effectiveness of the GSM transmitters and locate animals that might have died.

In December, the first river otter was successfully captured and implanted with a GSM/radio transmitter in Boone County. The animal was a 20lb adult female otter that the program was able to track through winter and spring. By late spring 2024, the furbearer program captured and implanted six more otters in Boone County and one in Randolph County, bringing the project's total number of marked otters to eight. The otters for this study will be track for the next year until their transmitters die or the otters dies. Results of this pilot study will be used to inform a large-scale river otter survival and harvest rate study that will potentially be implemented in the Fall of 2026.



Furbearer program taking measurements of captured river otter.



River otter being released after recovering from transmitter implantation surgery.

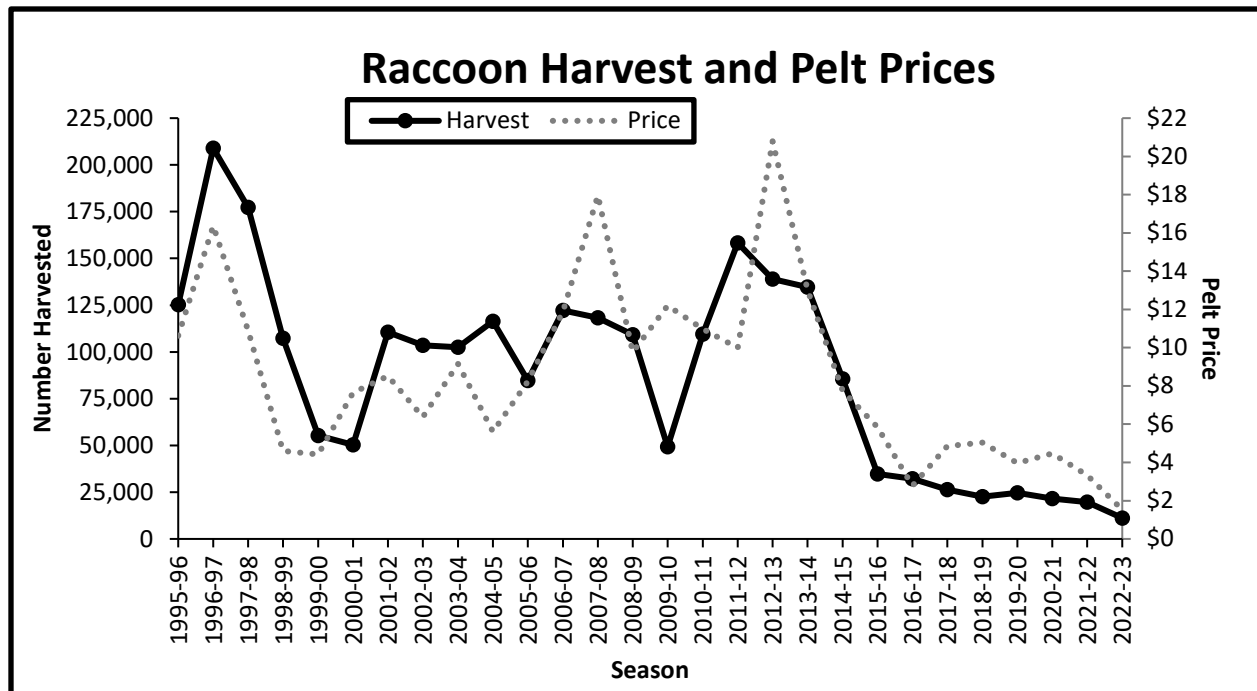
## **SECTION II: Missouri Furbearer Status 2022 - 2023**

### **Raccoon Harvest and Population Trends**

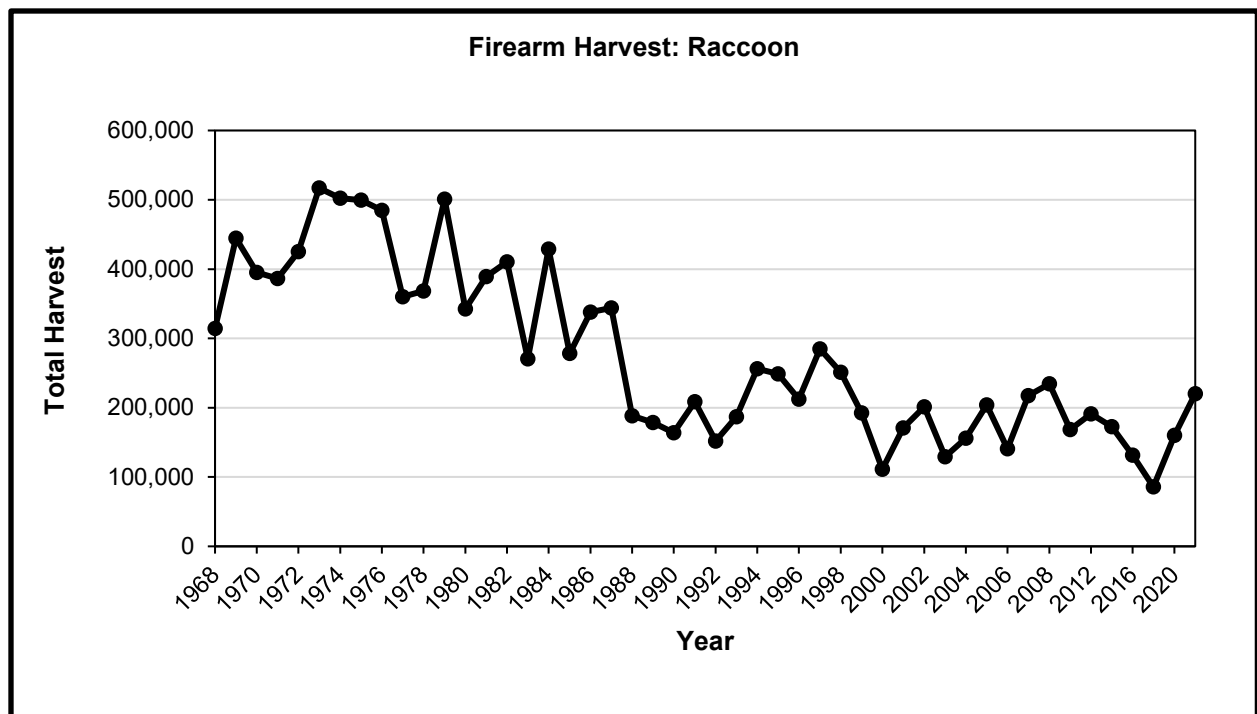
**Raccoon harvest** records based on fur buyers' records in 2022-2023 totaled 11,196 and included individuals harvested by both trapping and hunting methods (Figure 3). This year's harvest was down 43.37% from last year's harvest of 19,770. This year's pelt prices are down 54.1%. Both harvest numbers and pelt prices for raccoons have been decreasing since the 2019-2020 season. The 2022-2023 season resulted in the lowest raccoon harvest to date. Before that, 1942 was the lowest recorded season for raccoon harvest. Average raccoon pelt prices are down 92.6% from the last price peak in the 2012-2013 season. Reported raccoon harvest via the biannual small game survey (survey sent out to all small game hunters every other year) shows that raccoon harvest was up from the last two years and is slightly above the 20-year average.



**Population trends** are derived from the Archer's Index Survey and the Sign Station Survey. For a detailed description of these surveys, see Section I of this report. During the hunting season of 2022, bowhunters submitted the number of raccoons observed during archery hunting hours and the number of hours spent afield. Based on these observations, the number of raccoons sighted per 1,000 hours decreased by 20% to 42.4 in 2023 from 53.1 in 2022 (Figure 5). Presence of raccoon tracks at furbearer sign stations increased to an index of 195 in 2023 from 187 in 2022 (Figure 6). Indices derived from Bow Hunter Observation Surveys and Sign Station Surveys indicate an overall increasing trend in raccoon population abundance. Short-term fluctuations are normal and expected due to the dynamic nature of raccoon populations. Based on harvest and pelt prices of previous trapping and hunting seasons, harvest pressure is expected to remain stable for the 2023-24 season.

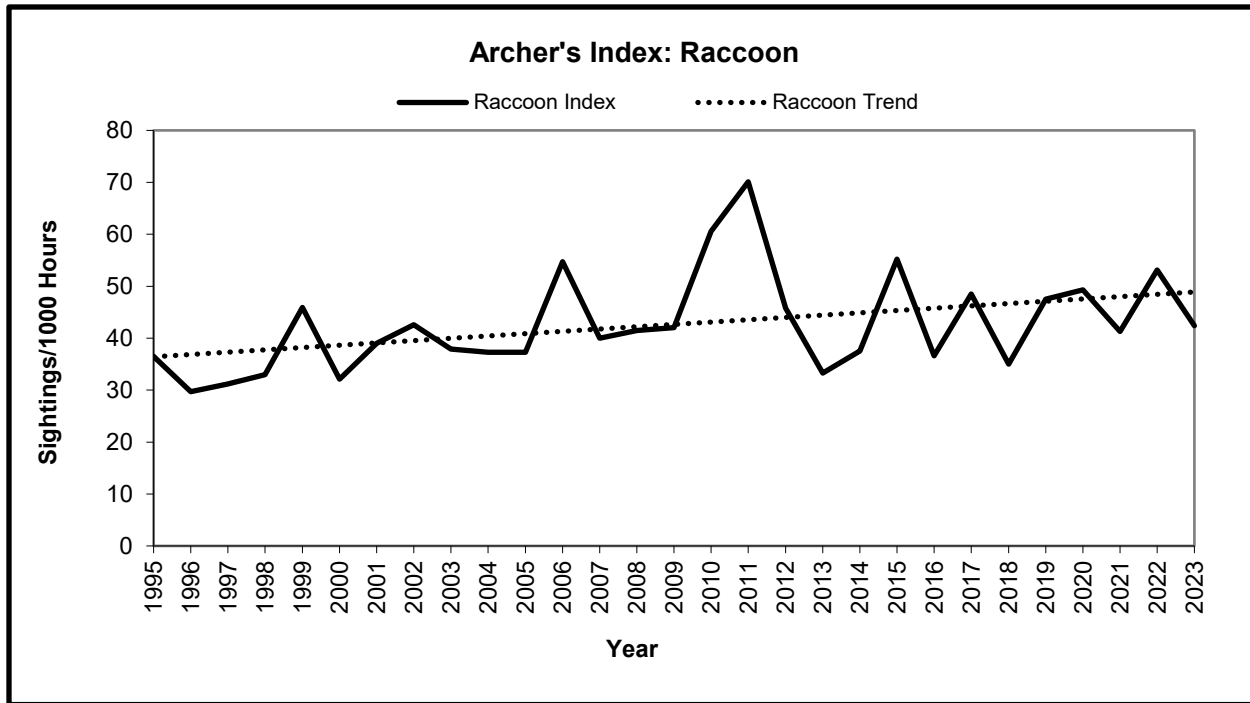


**Figure 3.** Comparison of Missouri raccoon harvest and pelt prices since 1995. Harvest estimates are derived from fur buyer records. Annual pelt prices are the average price from the Missouri Trappers Association Fur Auction.

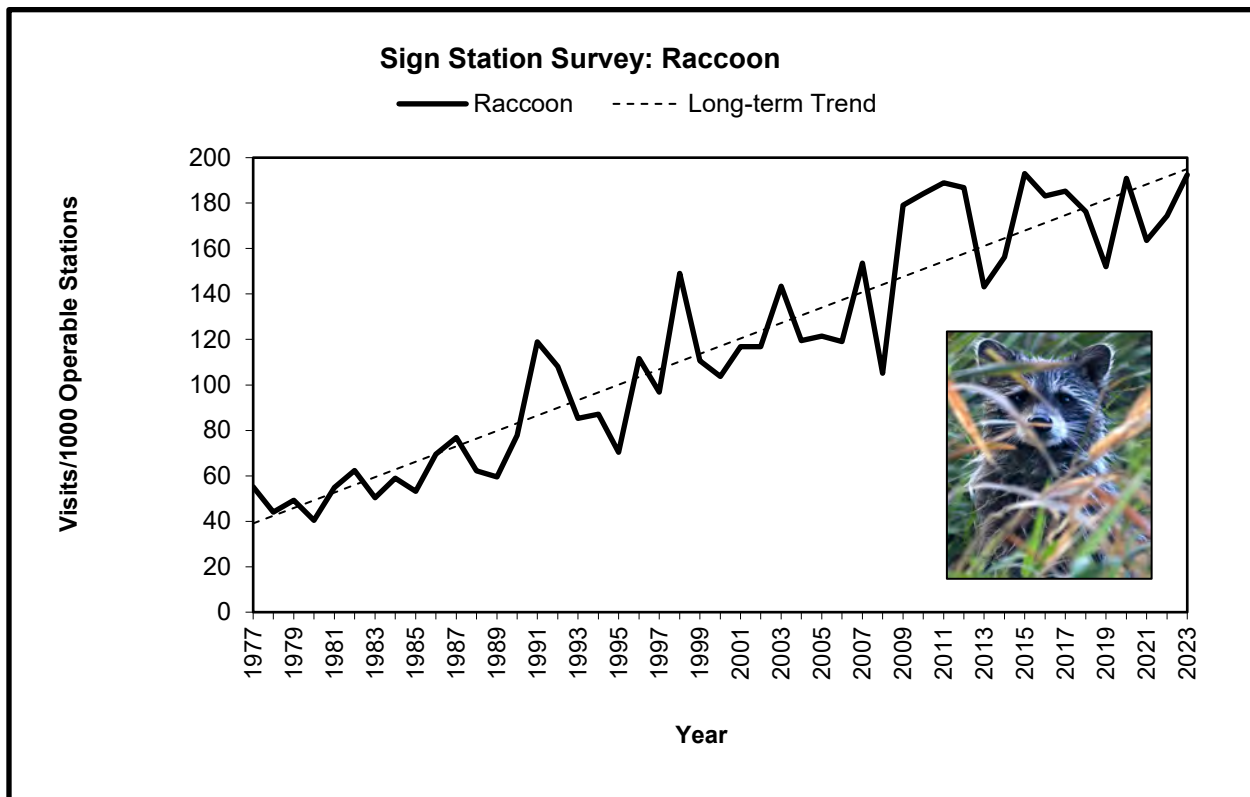


**Figure 4.** Raccoon harvest via firearm reports through biannual small game survey from 1968-2022.





**Figure 5.** Raccoon population trends based on the Archer's Index, derived from the MDC Bowhunter Observation Survey.



**Figure 6.** Missouri raccoon population trends based on the Furbearer Sign Station Survey Index.

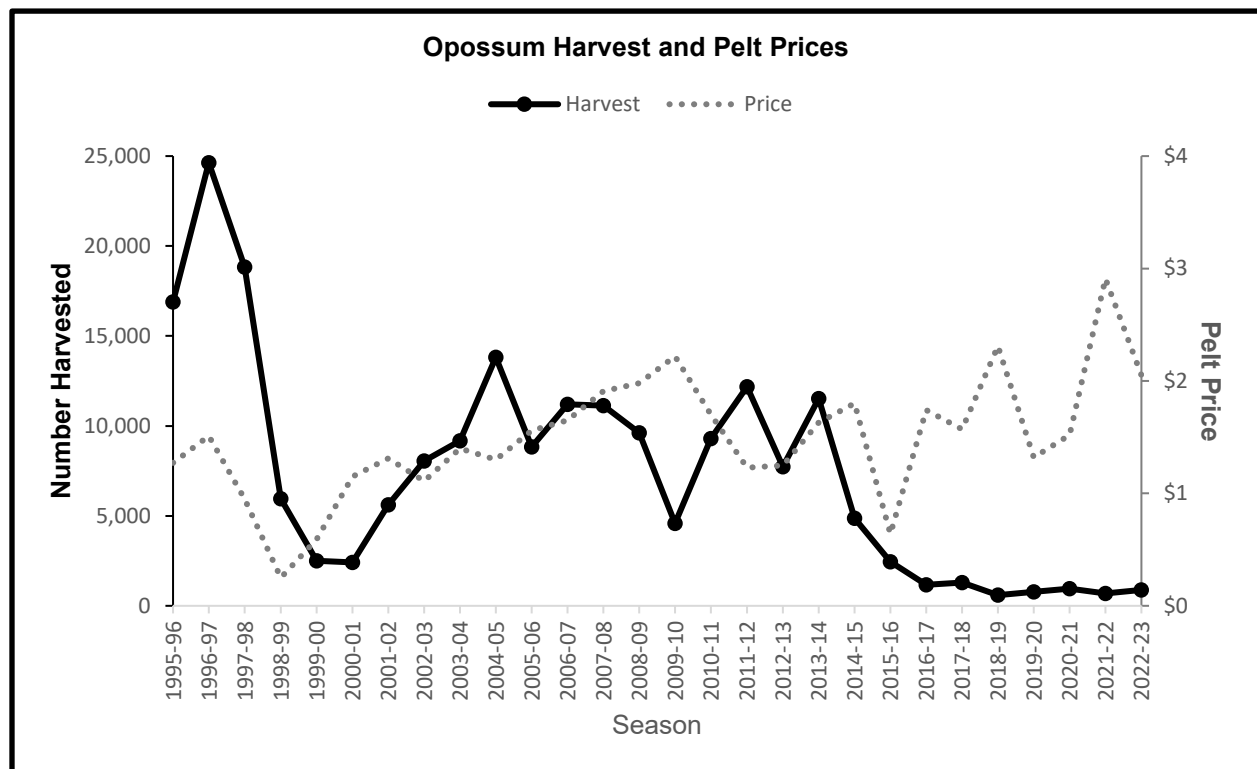


## Virginia Opossum Harvest and Population Trends

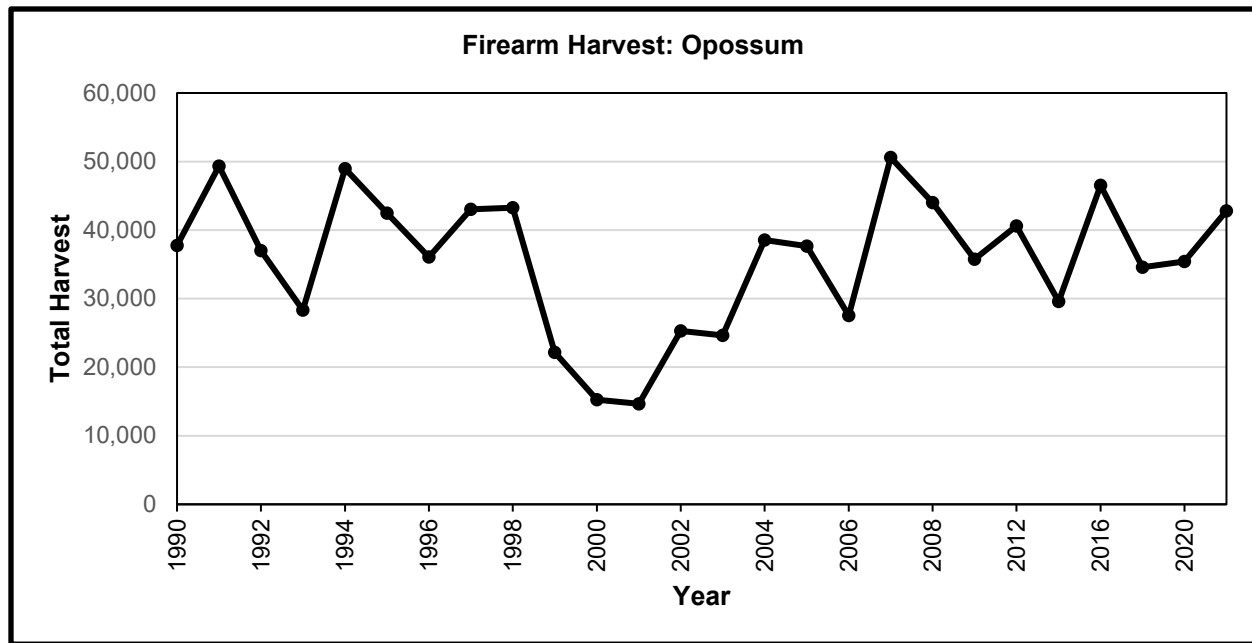
**Virginia opossum harvest** in 2022-2023 totaled 884 (Figure 7). This year's harvest was up 28.3% from last year's harvest of 689 individuals (Figure 8). Average Virginia Opossum pelt prices for 2022-2023 decreased 29.6% to \$2.05 from 2021-2022 season's \$2.91.



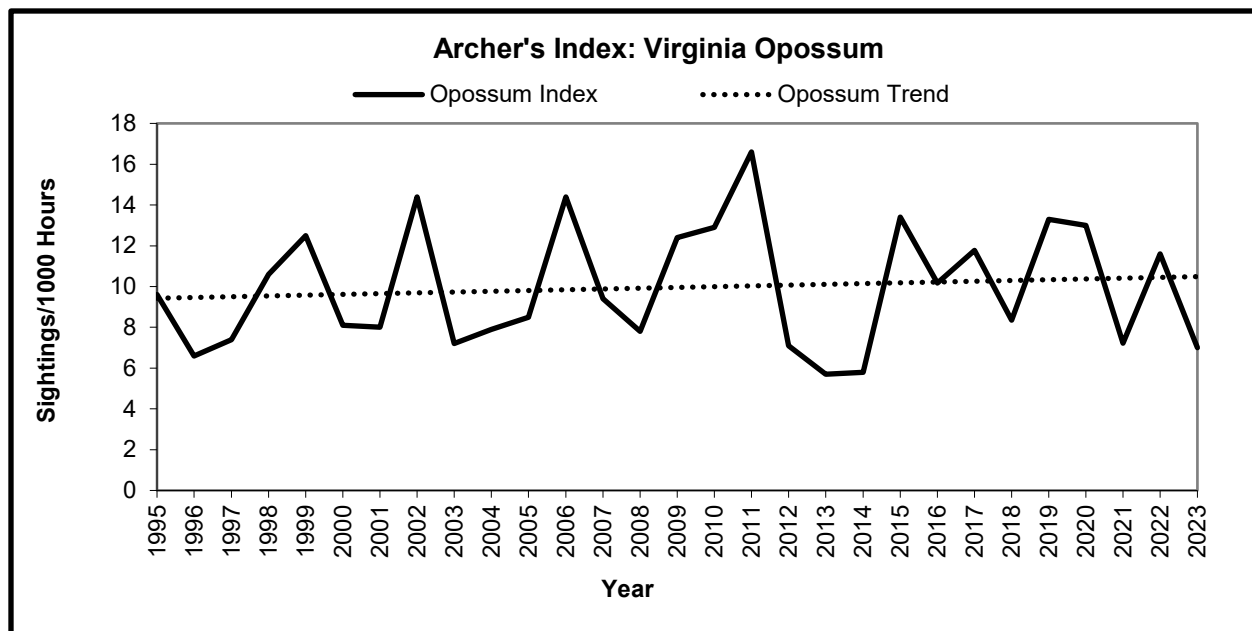
**Population trends** are derived from the Archer's Index and Sign Station Survey. Based on bowhunter observations, the number of Virginia opossums sighted per 1,000 hours decreased by 40% to 7.0 in 2023 from 11.6 in 2022 (Figure 9). However, presence of Virginia opossum tracks at furbearer sign stations increased to an index of 194.47 in 2023 (Figure 10). The long-term population trend data from surveys suggest populations are stable and increasing slightly over time.



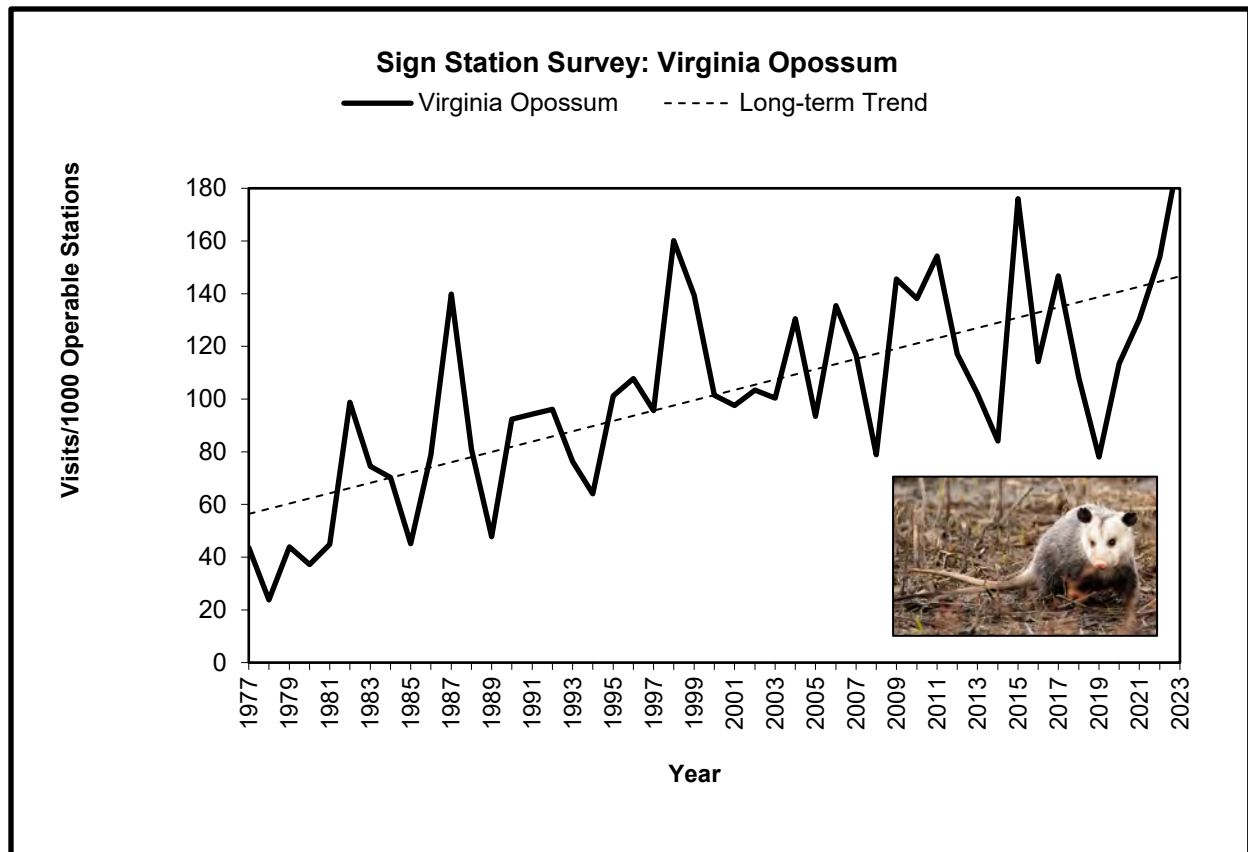
**Figure 7.** Comparison of Missouri Virginia opossum harvest and pelt since 1995. Harvest estimates are derived from fur buyer records. Annual pelt price estimates are the average price from the Missouri Trappers Association Fur Auction.



**Figure 8.** Opossum harvest via firearm reports through biannual small game survey from 1990-2022.



**Figure 9.** Virginia Opossum population trends based on the Archer's Index, derived from the MDC Bowhunter Observation Survey results for Virginia Opossum.



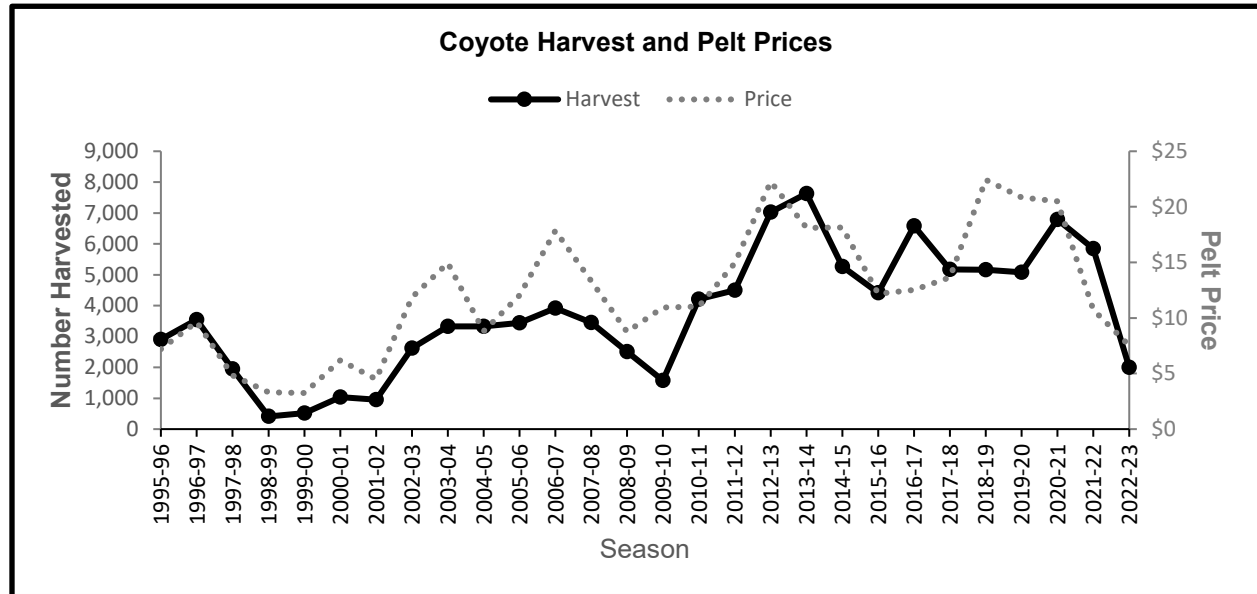
**Figure 10.** Missouri Virginia opossum population trends based on the Furbearer Sign Station Survey Index.

## Coyote Harvest and Population Trends

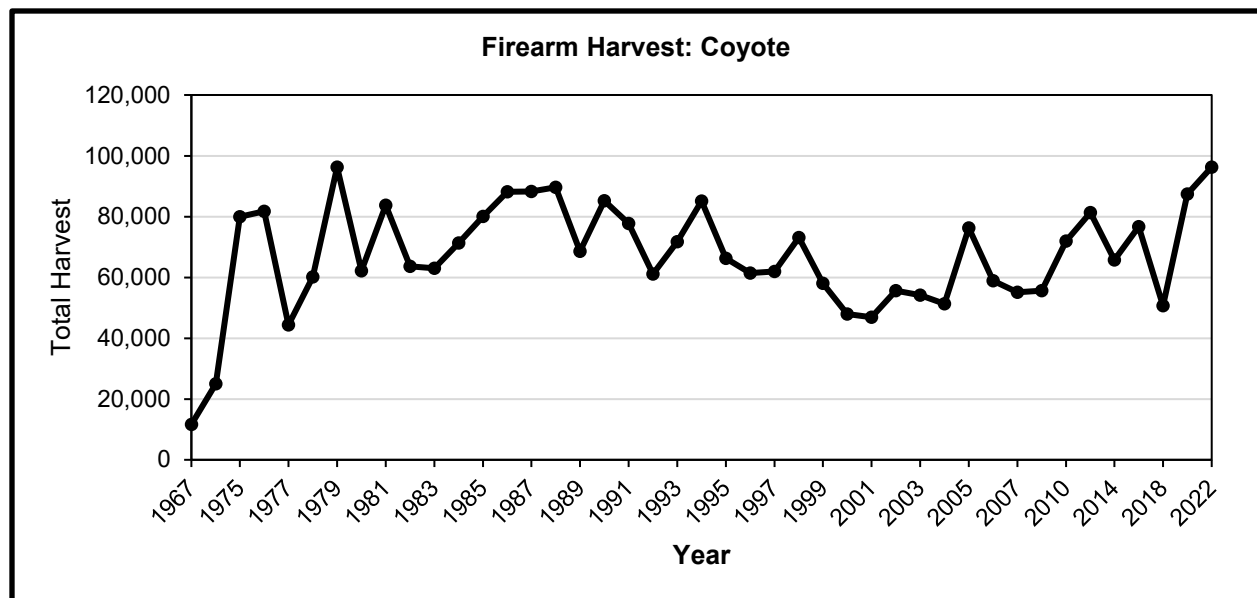
**Coyote harvest**, based on Commercial Fur Buyer reports, during the 2022-2023 furbearer season was down from the 2021-2022 season with 1,997 individuals harvested (Figure 11) but we did see an over increase in hunter harvest of coyotes (Figure 12). Predator hunting continues to increase in popularity, and survey data suggest over 25,000 people hunt coyotes annually. Many trappers enjoy the challenge of catching coyotes, and this is reflected in the harvest totals. Coyote pelt prices averaged \$7.52 this year with a decrease of 30% from the previous season. However, coyote pelts are becoming increasingly popular in the international fur market, which may influence the local market for this species (NAFA, 2019; FHA, 2019).



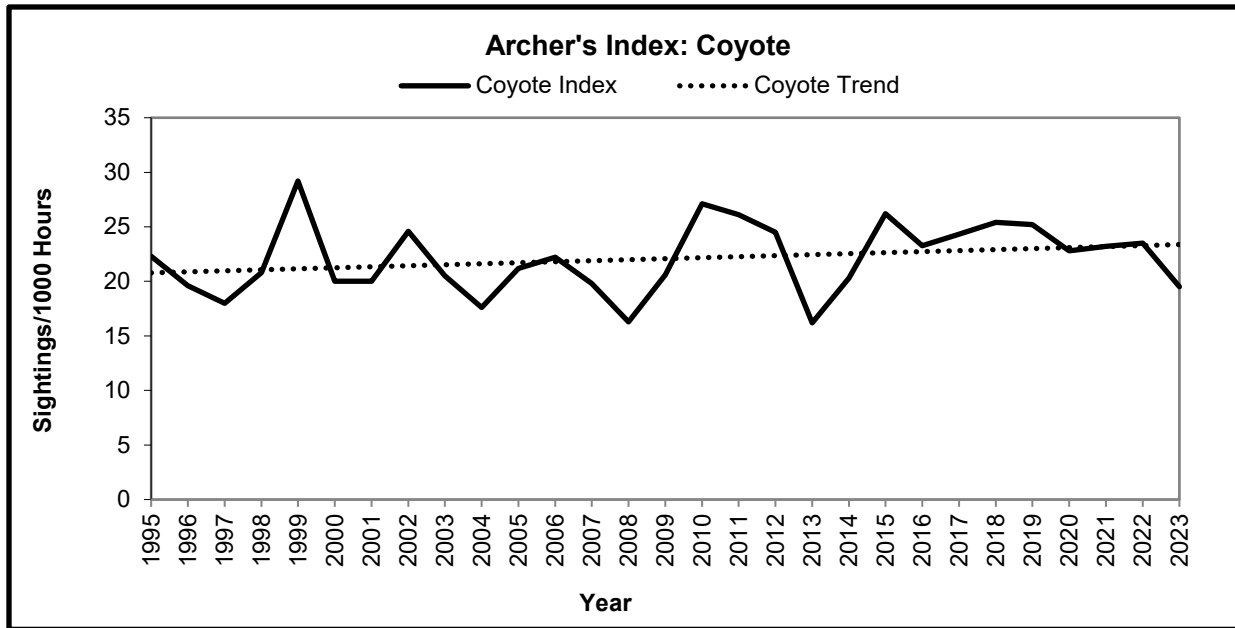
**Population trend** data from the Archer's Index (Figure 13) and Sign Station Survey (Figure 14) for coyotes suggest populations are currently stable with an overall increasing trend since the 1970s when the Sign Station Survey began and the early 1980s when the Archer's Index began. Based on bowhunter observations, the number of coyotes sighted per 1,000 hours decreased slightly with 19.5 in 2023 and 23.5 in 2022. Presence of coyote tracks at furbearer sign stations also decreased to an index of 86.9 in 2023 from 125 in 2022.



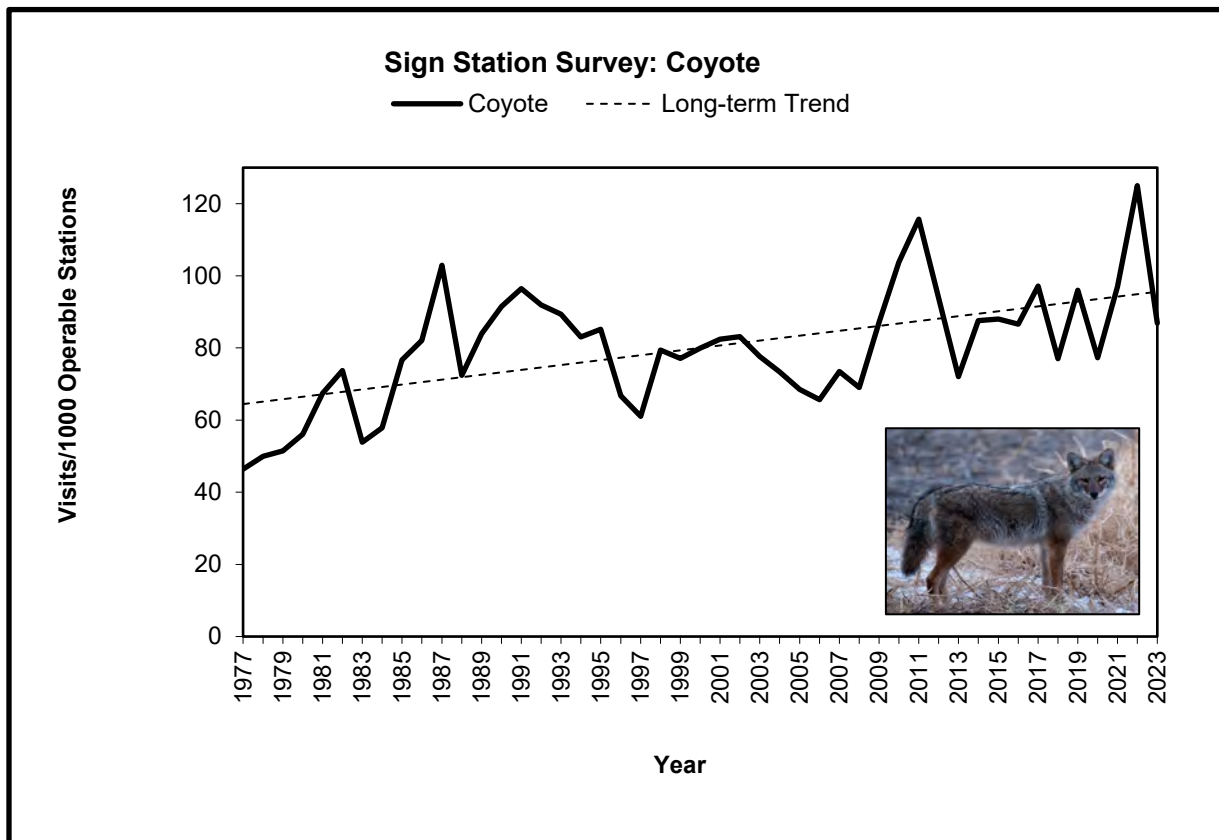
**Figure 11.** Comparison of Missouri coyote harvest and pelt prices since 1995. Harvest estimates are derived from fur buyer records. Annual pelt price estimates are the average price from the Missouri Trappers Association Fur Auction.



**Figure 12.** Coyote harvest via firearm reports through biannual small game survey from 1967-2022.



**Figure 13.** Coyote population trends based on the Archer's Index, derived from the MDC Bowhunter Observation Survey.



**Figure 14.** Missouri coyote population trends based on the Furbearer Sign Station Survey Index.



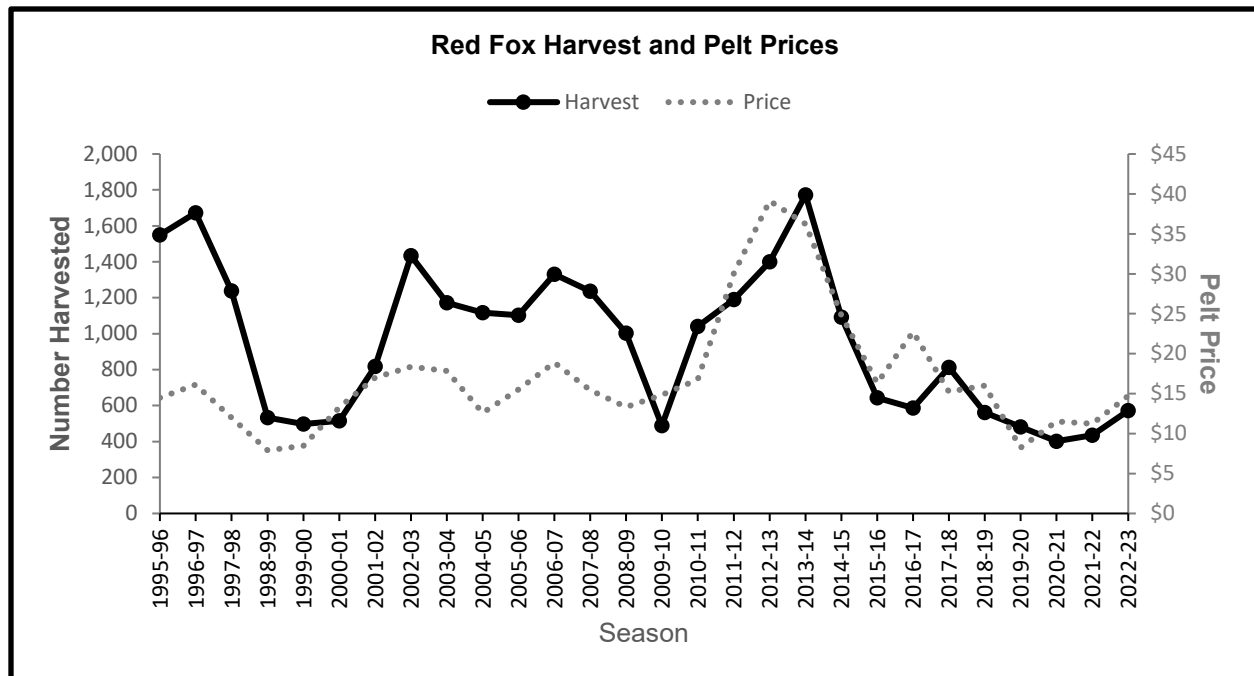
## Fox Harvest and Population Trends

**Red fox harvest** during the 2022-23 season increased 31.19% from 436 to 572 individuals harvested (Figure 15). Average price for red fox pelts increased by 31% to \$14.72 from 2021-2022 season's \$11.24.

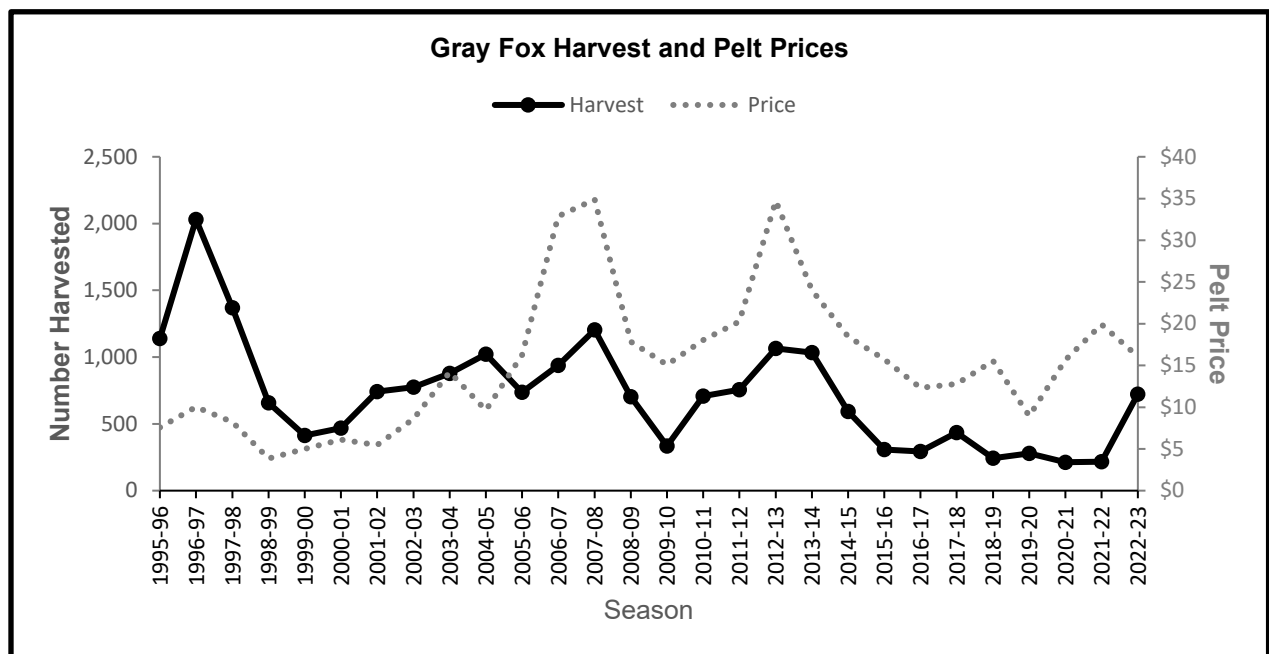
**Gray Fox Harvest** increased significantly in 2022-2023 by 234.72% to 723 individuals compared with last year's harvest of 216 (Figure 16). This trend was also observed in firearm harvest (Figure 17, 18). Average price for gray fox pelts decreased by 19.1% from 2021-2022 season's \$19.90 to \$16.09. Fox harvest is typically a by-product of bobcat or coyote trapper effort but it's unclear why there is such a large difference in the red and gray fox harvest.

**Population trends** are derived from the Archer's Index and Sign Station Survey. Bowhunter observations and sign station surveys offer a long-term perspective suggesting declines in both red and gray fox populations (Figures 19 -21). Long-term fox population declines may be the result of interspecific competition with coyotes and bobcats. Another possible strain on gray fox populations is the increasing population of raccoons and the associated distemper virus, for which gray fox may be particularly vulnerable. Regional variability in fox abundance likely occurs, including around suburban areas where foxes may seek refuge from coyotes or respond to increased prey availability, but the overall long-term trend for both fox species indicates a decline in abundance.

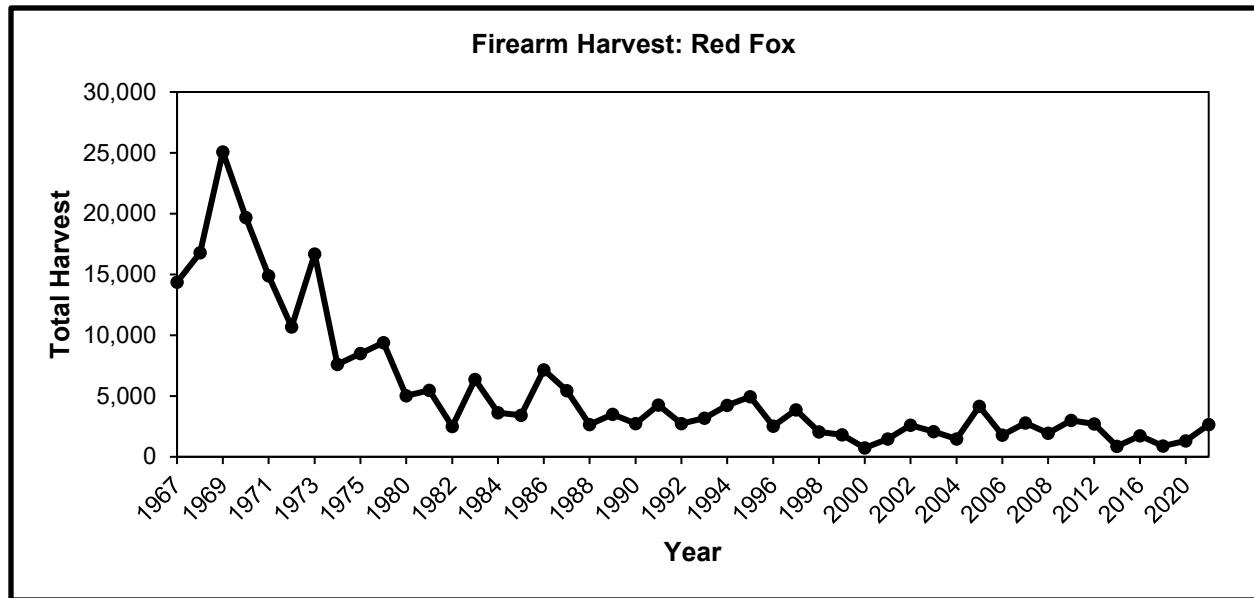




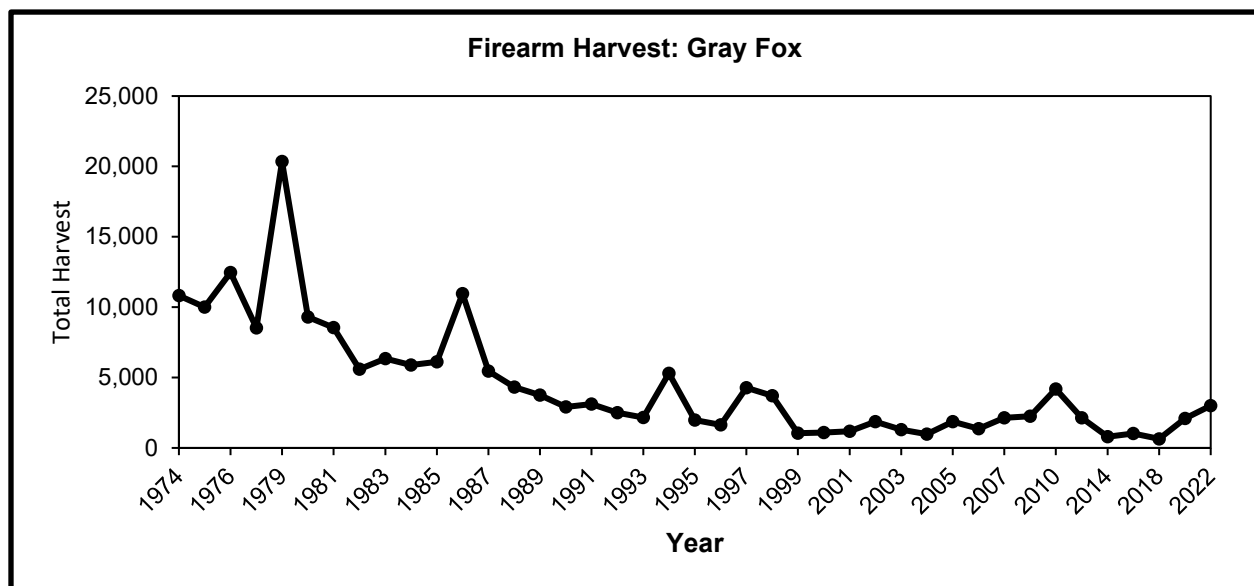
**Figure 15.** Comparison of Missouri red fox harvest and pelt prices since 1995. Harvest estimates are derived from fur buyer records. Annual pelt price estimates are the average price from the Missouri Trappers Association Fur Auction.



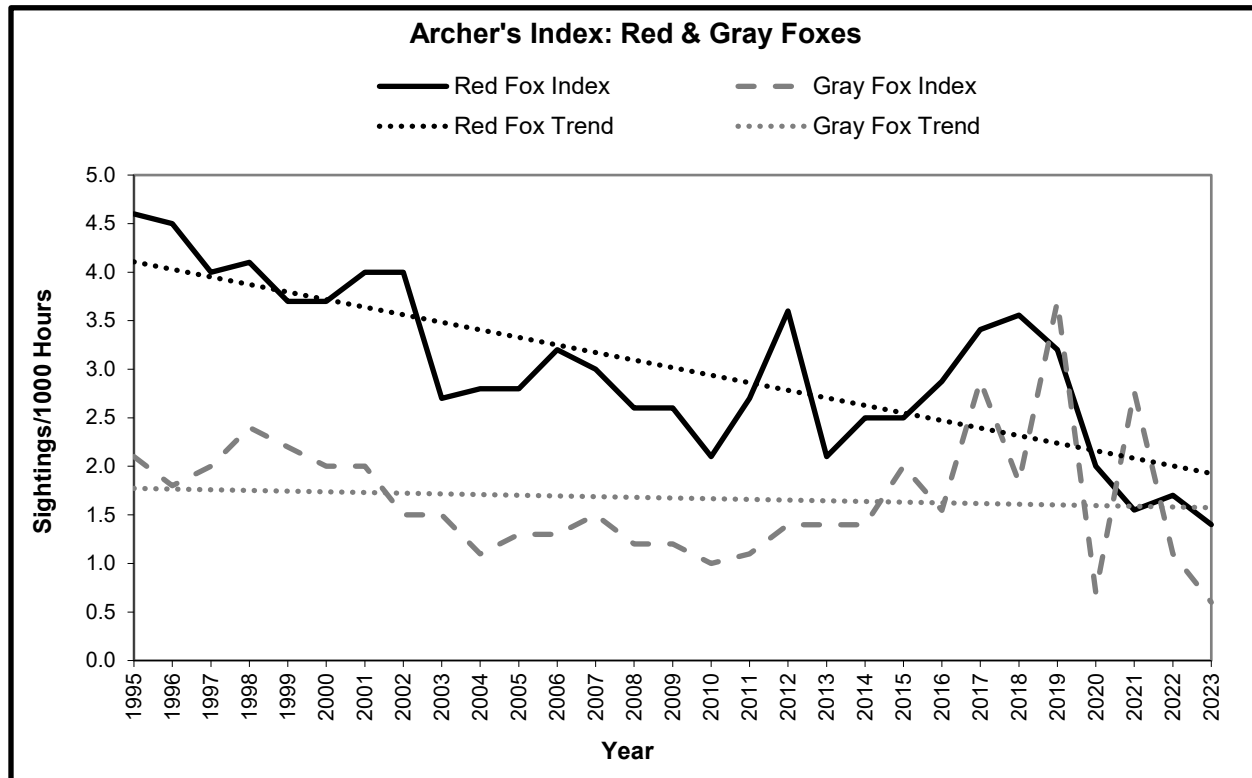
**Figure 16.** Comparison of Missouri gray fox harvest and pelt prices since 1995. Harvest estimates are derived from fur buyer records. Annual pelt price estimates are the average price from the Missouri Trappers Association Fur Auction.



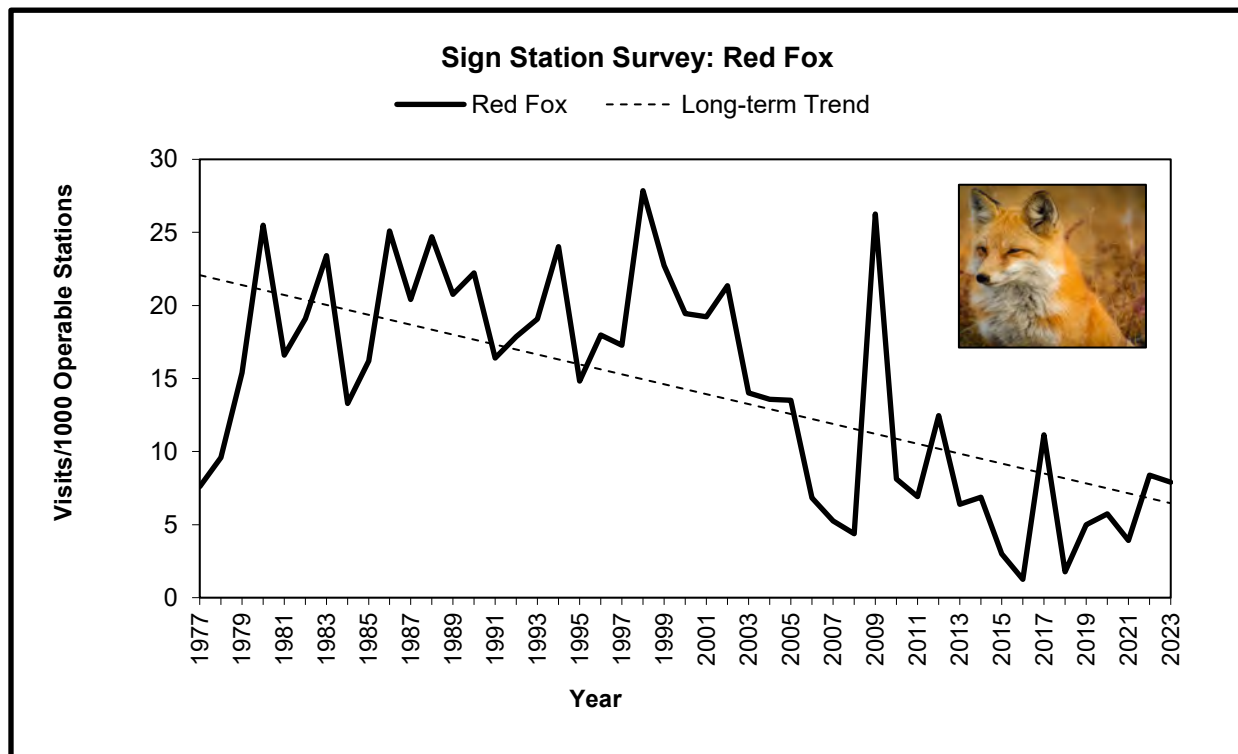
**Figure 17.** Red fox harvest via firearm reports through biannual small game survey from 1967-2022.



**Figure 18.** Gray fox harvest via firearm reports through biannual small game survey from 1974-2022.



**Figure 19.** Missouri fox population trends based on the Archer's Index, derived from the MDC Bowhunter Observation Survey.



**Figure 20.** Missouri red fox population index trends from 1977 to 2023.

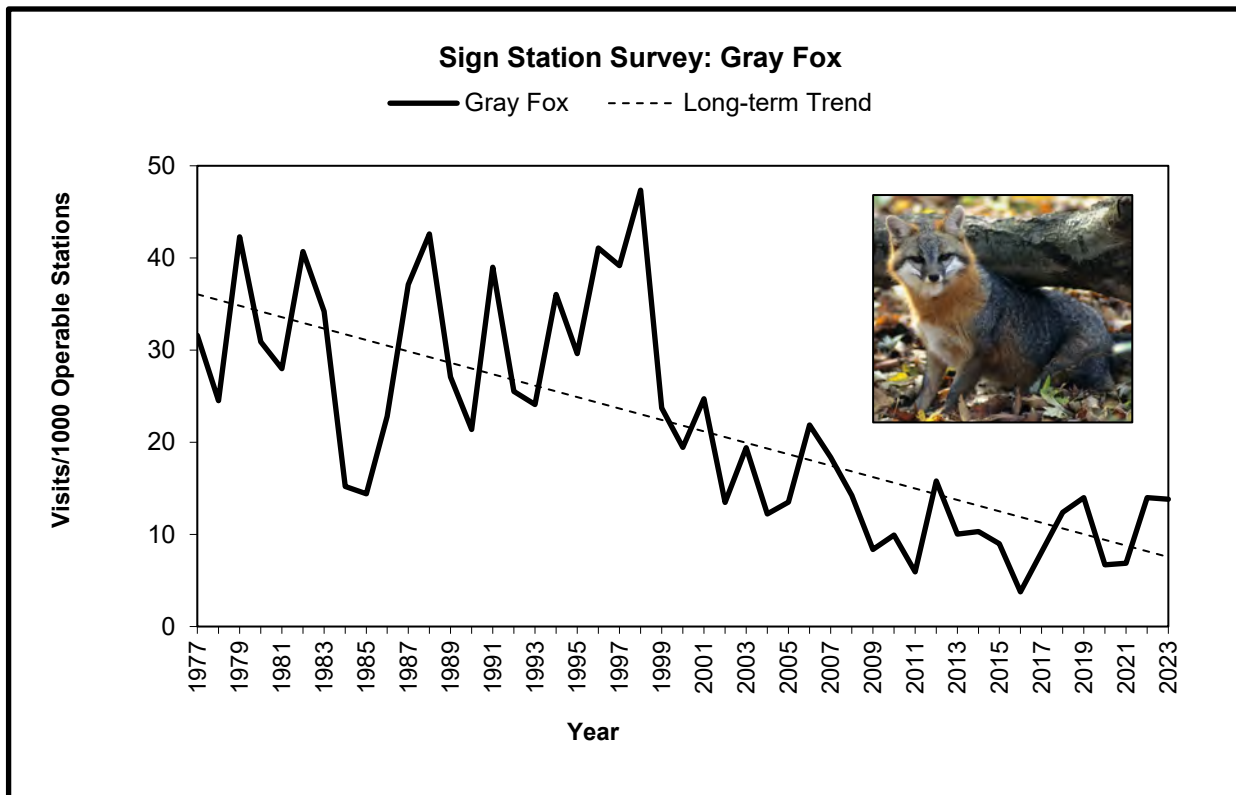


Figure 21. Missouri gray fox population index trends from 1977 to 2023.

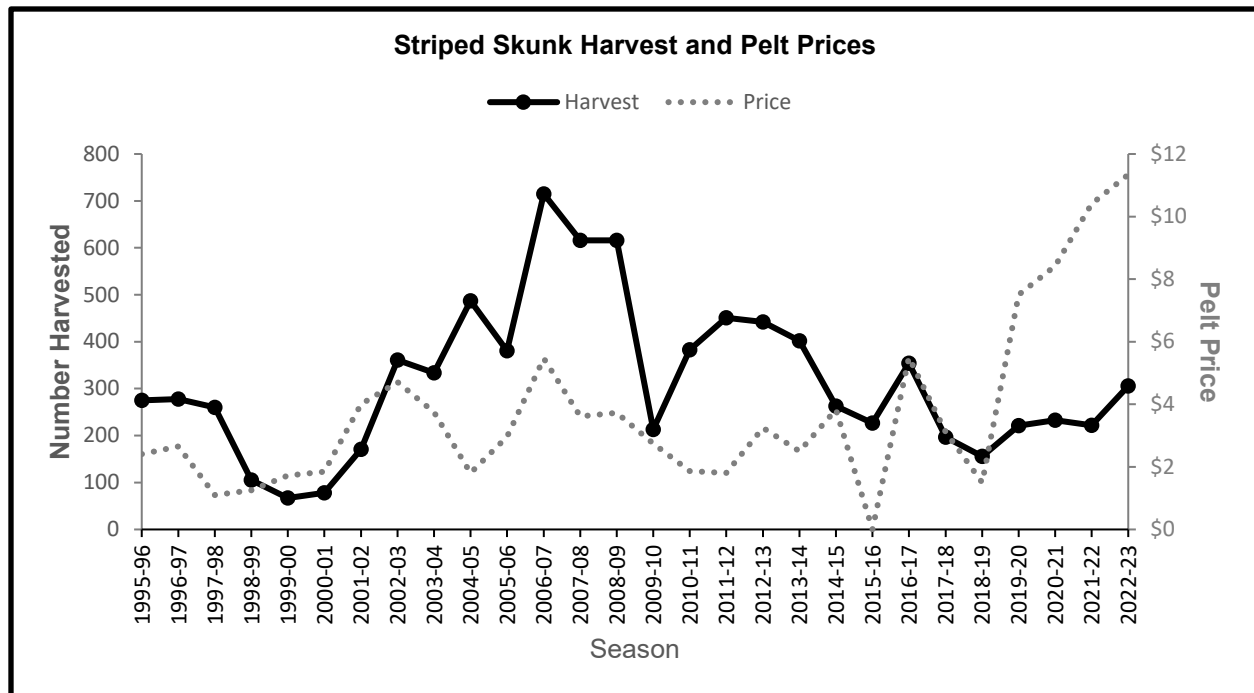
## Striped Skunk Harvest and Population Trends

**Striped skunk harvest** in 2022-2023 totaled 306 with most individuals harvested by trapping (Figure 22). This year's harvest was up 37.84% from last year's harvest of 222 individuals. Average striped skunk pelt prices for 2022-2023 increased 8.9% from \$10.41 in 2021-2022 to \$11.34. The last four seasons have resulted in the highest ever pelt prices for striped skunk, each subsequent year beating the last.

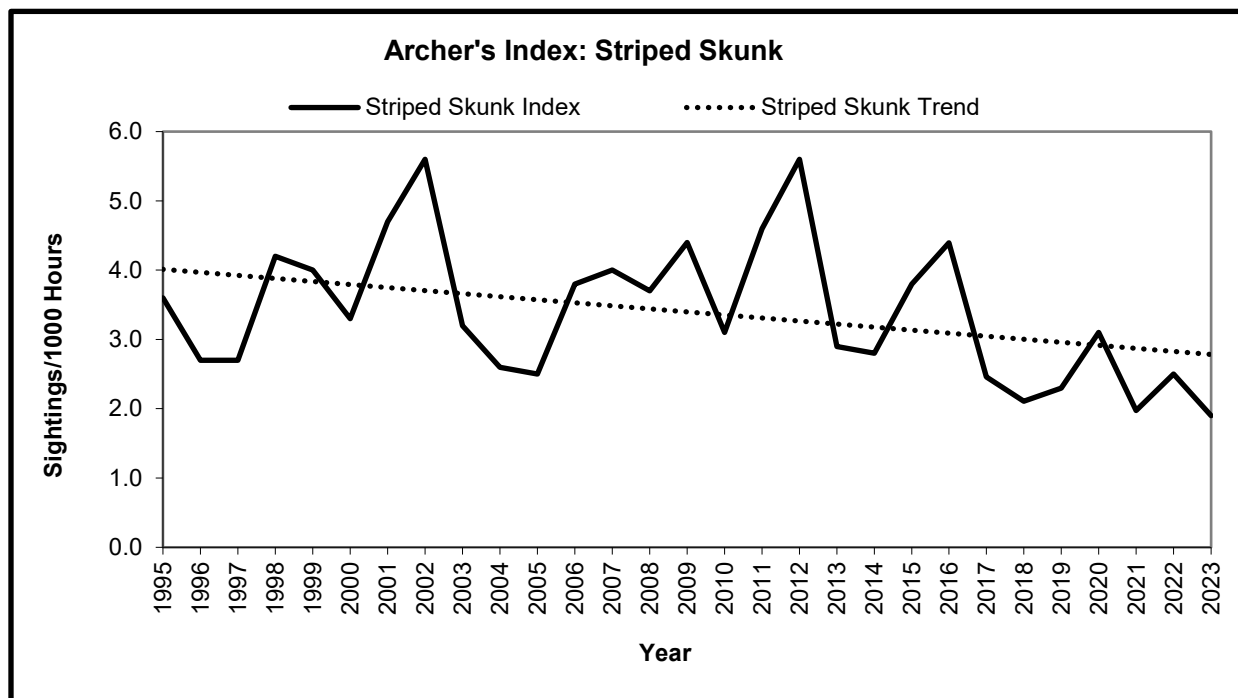
**Population trends** are derived from the Bowhunter Observation Survey and Furbearer Sign Station Survey. Population trend data from the Archer's Index (Figure 23) and Sign Station Survey (Figure 24) for striped skunk continue to suggest that the population is stable.



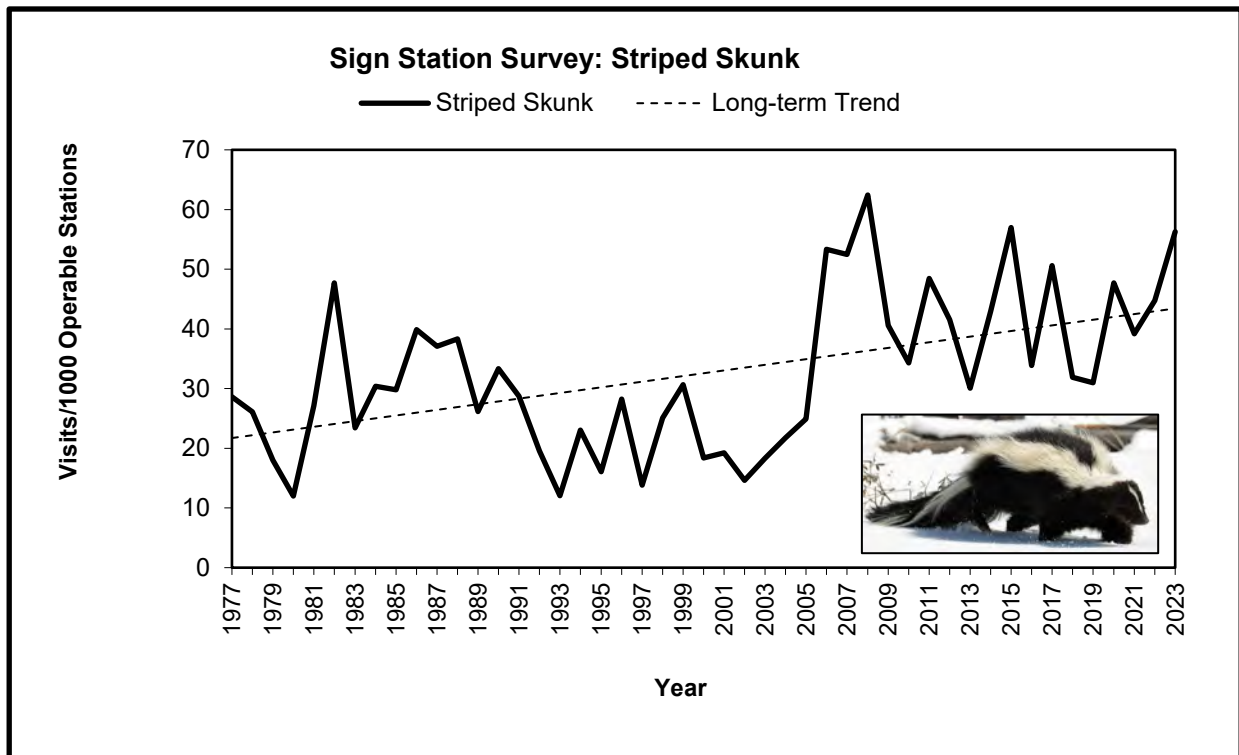




**Figure 22.** Comparison of Missouri striped skunk harvest and pelt prices since 1995. Harvest estimates are derived from fur buyer records. Annual pelt price estimates are the average price from the Missouri Trappers Association Fur Auction.



**Figure 23.** Striped skunk population trends based on the Archer's Index, derived from the MDC Bowhunter Observation Survey.



**Figure 24.** Missouri striped skunk population trends based on the Furbearer Sign Station Survey Index.

## Bobcat Harvest and Population Trends

**Bobcat harvest** during the 2022-2023 season was down 39.65% from 2021-2022 with **793 bobcats** harvested (Figure 25), however we saw an increase in the number of bobcats harvested with firearms (Figure 26). Prices during the 2022-2023 season increased by 96.8% from the previous year, to \$90.53. Trappers and hunters are required to check or register bobcat carcasses or green pelts at MDC offices or with Conservation Agents. The number of bobcat pelts purchased by fur dealers (2024) was significantly higher than those registered by trappers and hunters (793). Instead of selling to fur buyers, trappers usually make more money selling carcasses to taxidermists or selling mounted bobcats or may retain bobcat pelts for personal use. Trappers may have taken advantage of the recovered price for bobcat pelts to reduce large inventories from previous years.



**Population trends** are derived from the Bowhunter Observation Survey and Furbearer Sign Station Survey. Both Sign Station Survey and Archer's Index data suggest bobcat populations appears to be stable (Figures 27 and 28).

**Geographic distribution of harvest** varies by county and method. Trappers harvested 472 bobcats, while hunters harvested 306 bobcats. Harrison County had the highest total harvest at 63, the highest hunting harvest at 18, and the highest trapper harvest (Figure 29 and 30).

**Age analysis** of teeth submitted to the department show a majority of individuals harvested were in the age classes three years of age or below (Figure 31 and 32). These and other data will enable MDC to utilize Statistical Population Reconstruction (SPR) to monitor the bobcat population.

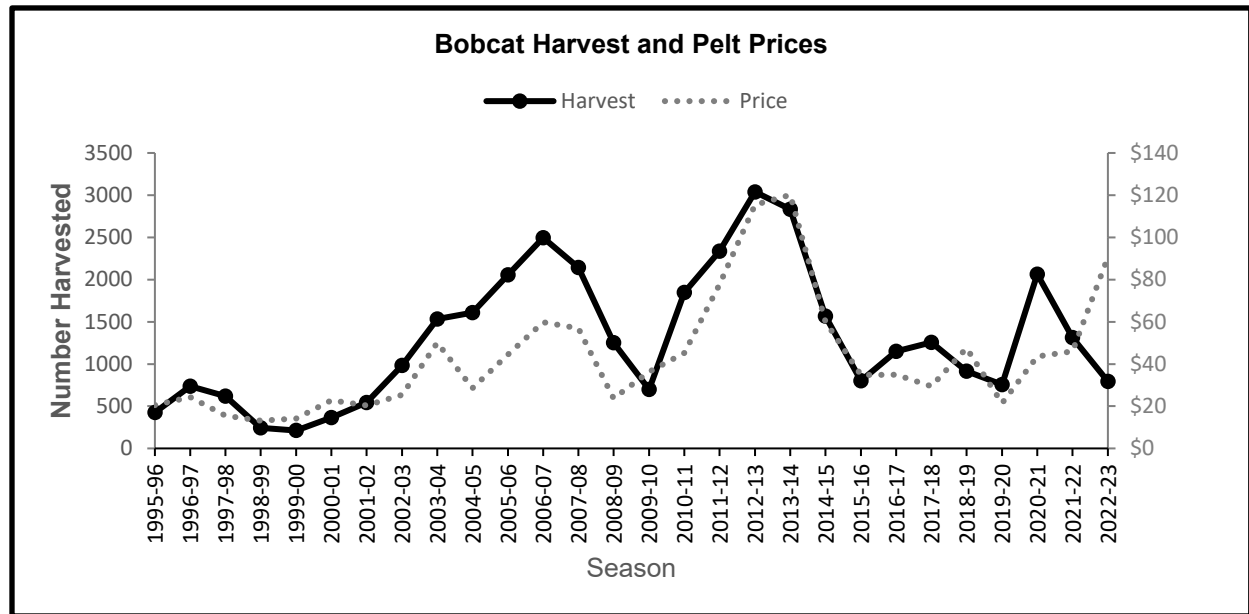


Figure 25. Missouri bobcat harvest trends since 1995 compared to average pelt prices.

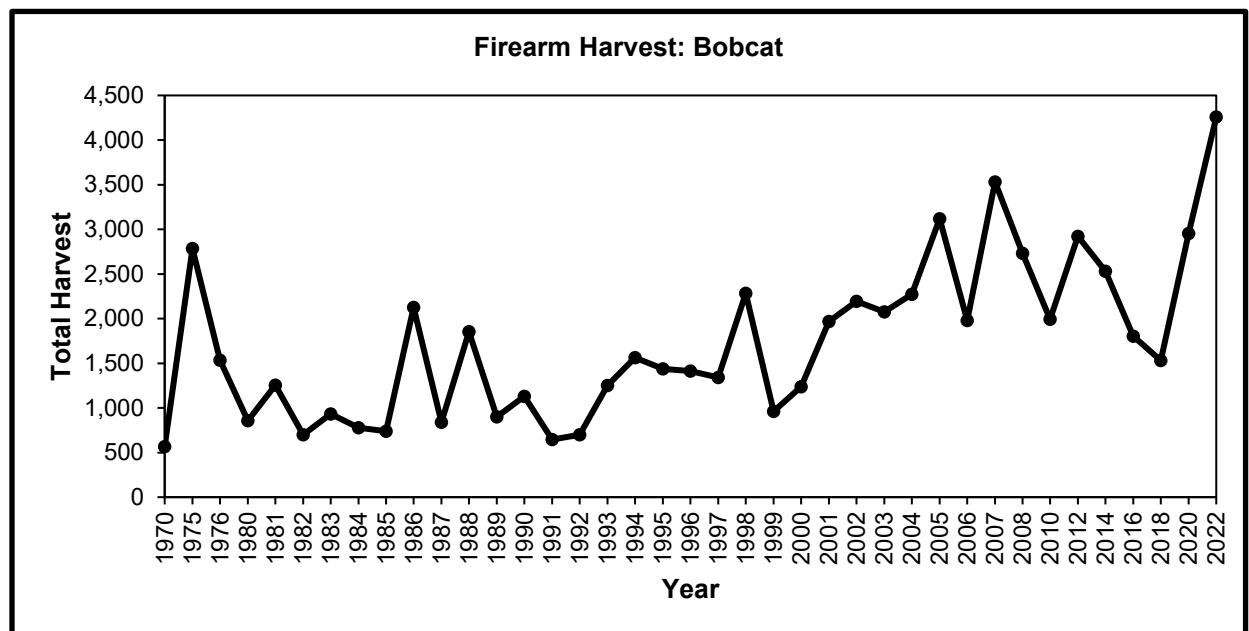
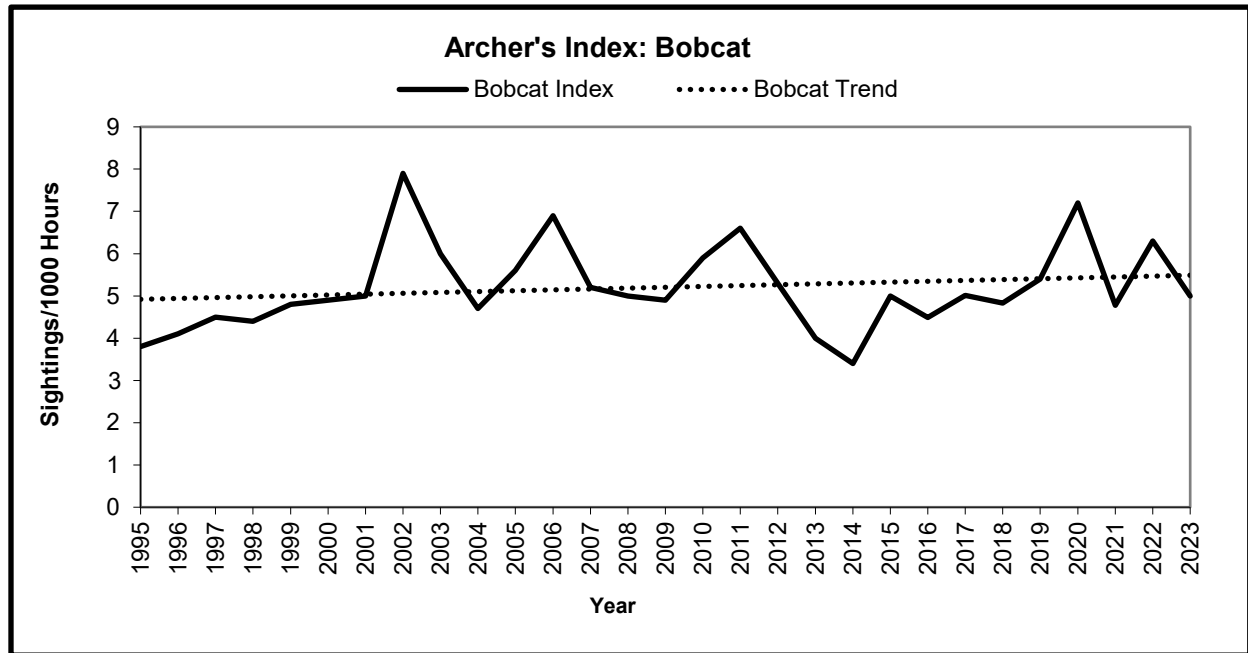
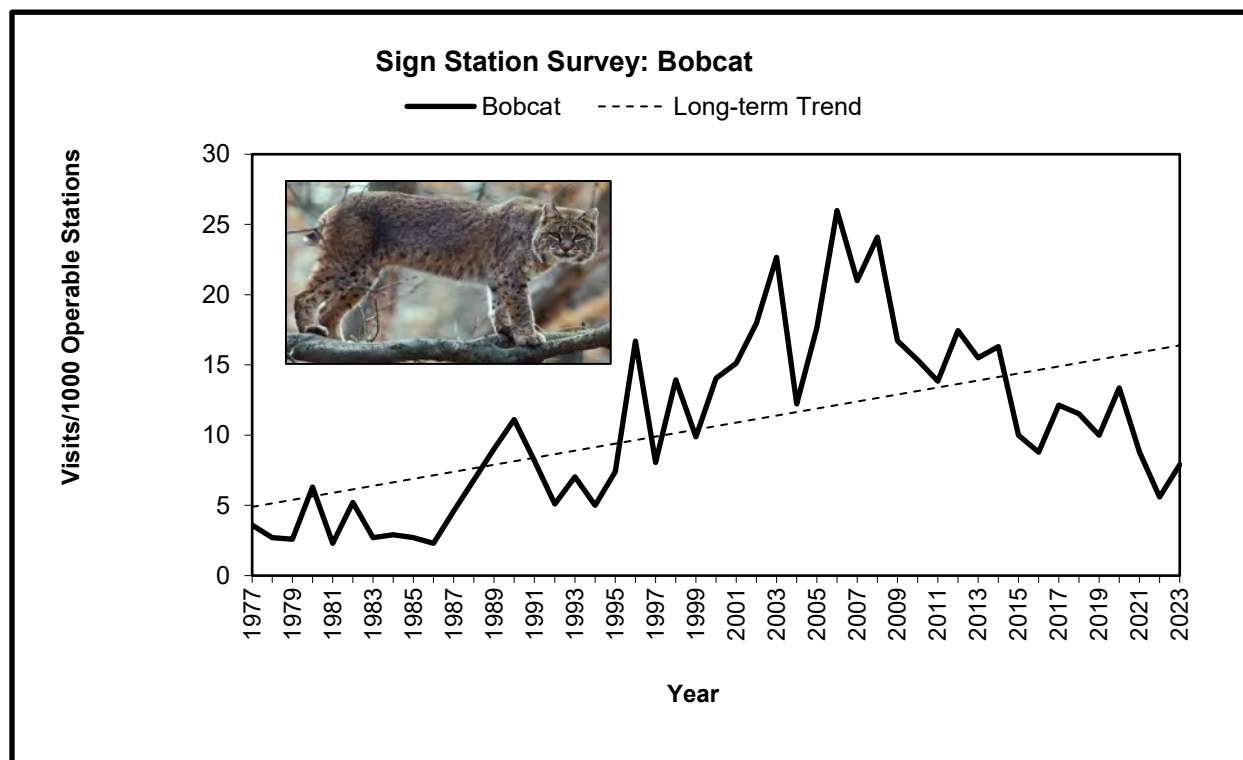


Figure 26. Bobcat harvest via firearm reports through biannual small game survey from 1970-2022.

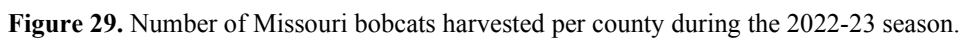


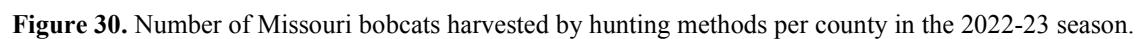
**Figure 27.** Missouri bobcat population trends based on the Archer's Index, derived from the MDC Bowhunter Observation Survey.

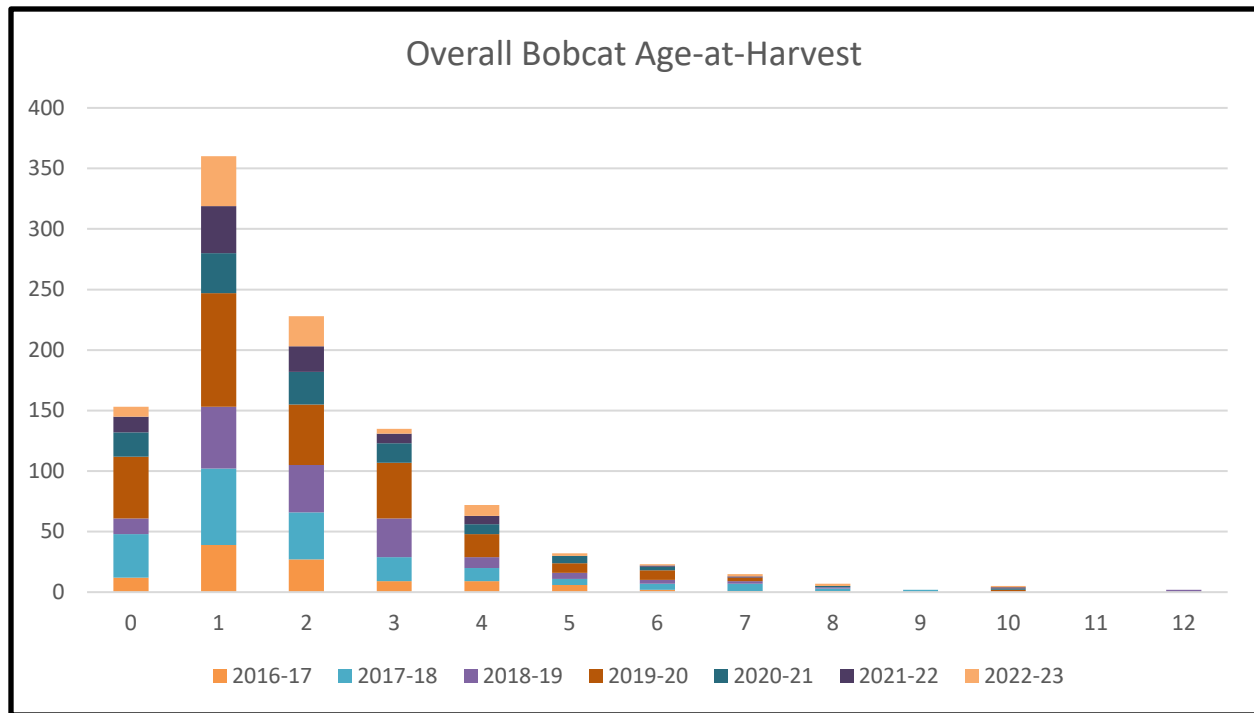


**Figure 28.** Missouri bobcat population trends based on the Furbearer Sign Station Survey Index.

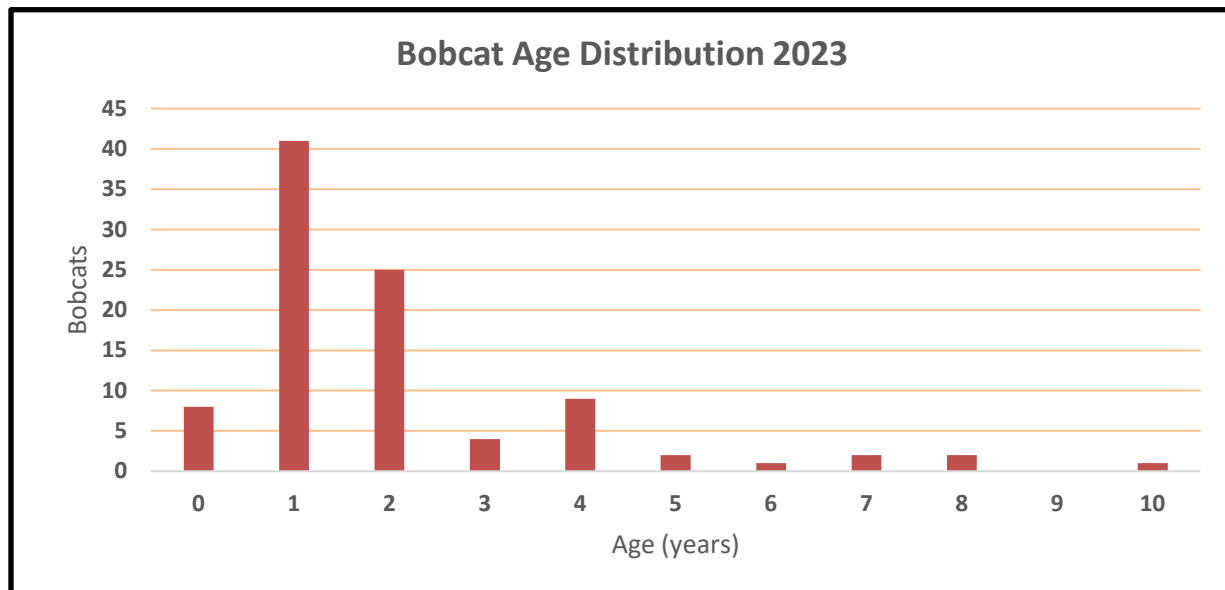








**Figure 31.** Ages of bobcats harvested from 2016 to 2023 stacked by age. Age is determined by analysis of teeth submitted voluntarily by trappers and hunters.



**Figure 32.** Ages of bobcats harvested from 2023 stacked by age. Age is determined by analysis of teeth submitted voluntarily by trappers and hunters.

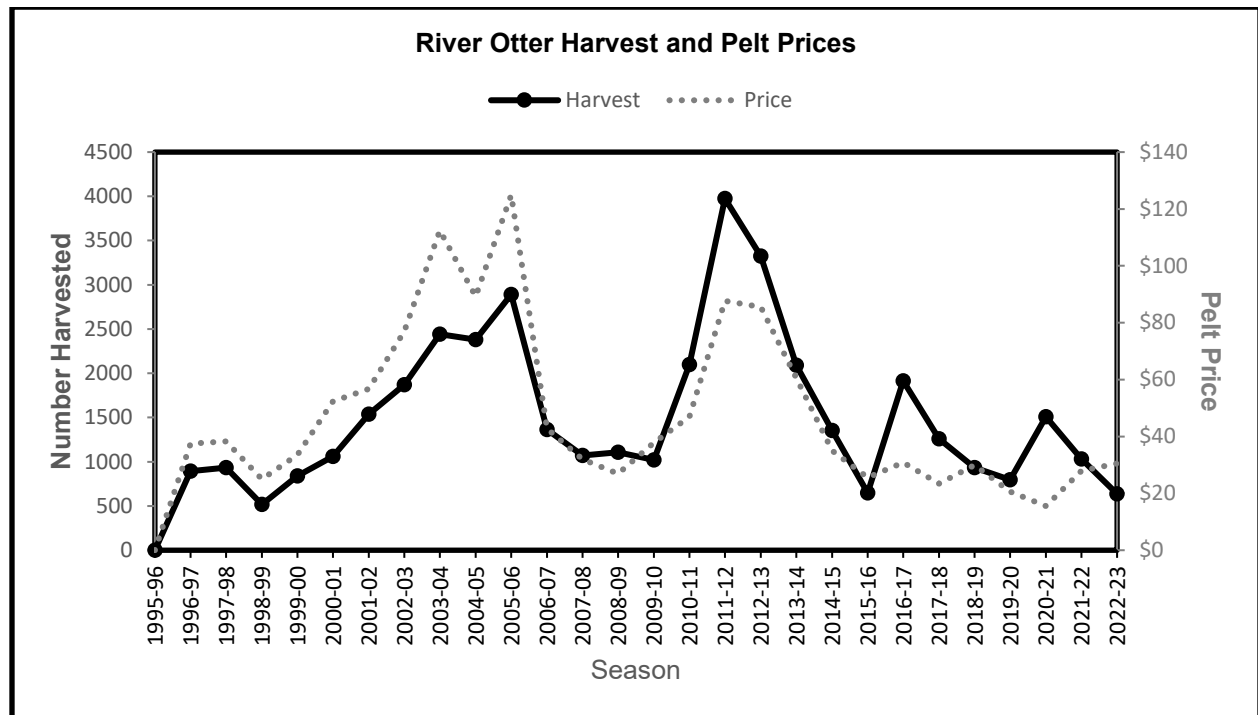
## River Otter Harvest

**River otter harvest** for the 2022-2023 season was 636 river otters, down 38.31% from last year. River otter pelt prices increased 8.9% from last year at \$27.97 to \$30.47 and were 32.7% lower than the peak prices in 2013-2014 season. The relatively low harvest of the last five seasons can be attributed to the steady decline in pelt prices with minor fluctuations (Figure 33). Trappers are required to check or register river otter carcasses or green hides at MDC offices or with Conservation Agents in accordance with requirements by CITES for exportation outside of the United States.



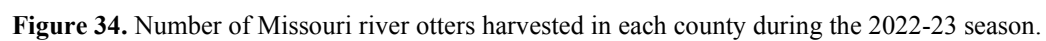
River otter harvest was highest in Chariton County with 122 individuals harvested (Figure 34). River otter harvest during the 2022-2023 season was highest in the Chariton River watershed with 129 harvested (Figure 35).

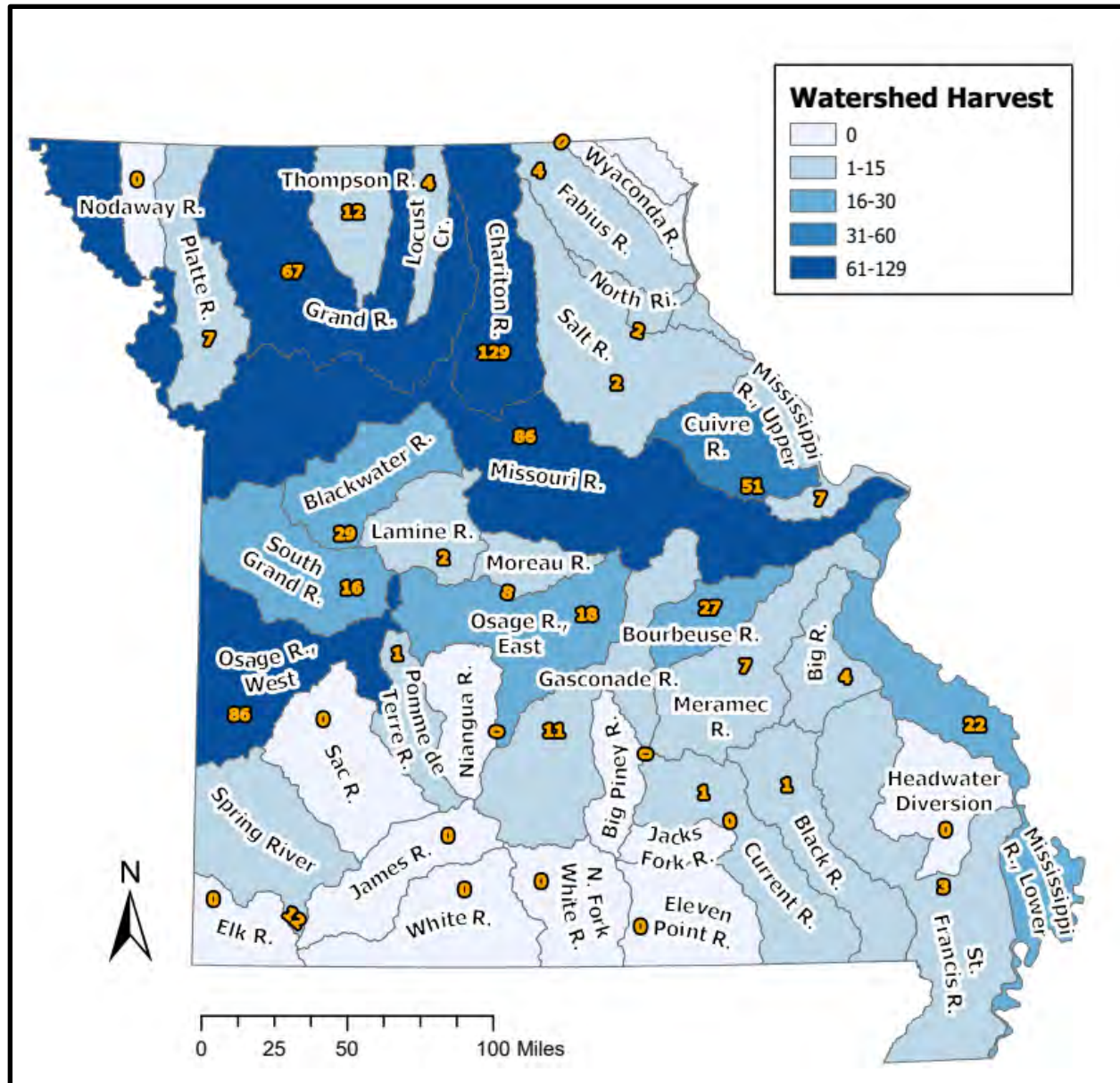
**Age analysis** of teeth submitted to the department indicates that individuals in the one-year age class represent the highest proportion of the harvest compared to other age classes (Figure 36 and 37, Table 3). These and other data will enable MDC to utilize Statistical Population Reconstruction (SPR) to monitor the bobcat population.



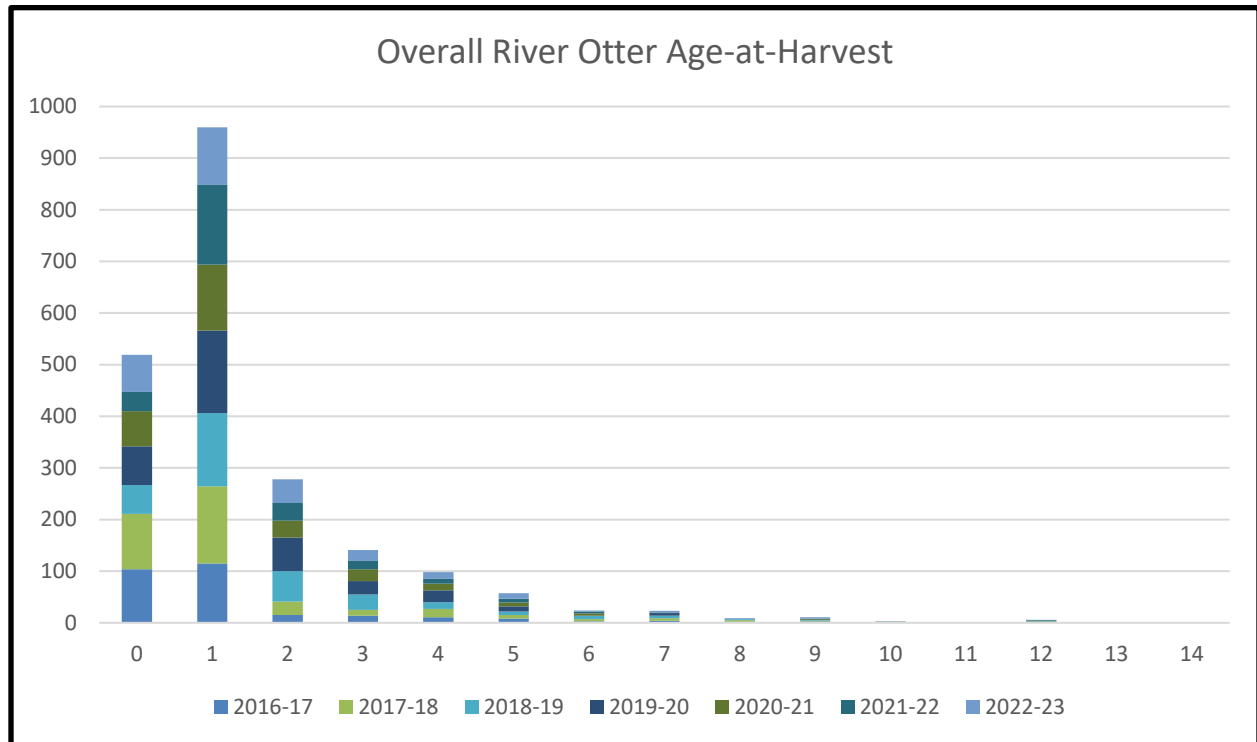
**Figure 33.** Missouri river otter harvest and average pelt prices from 1995 to 2023. Season did not open until 1996.



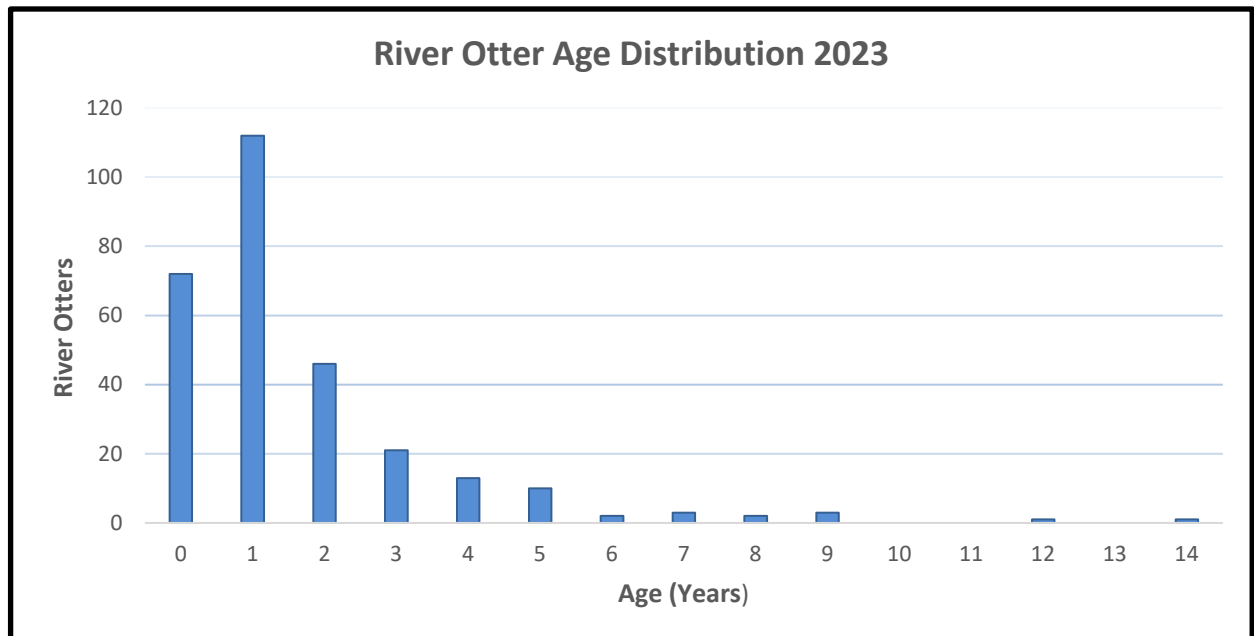




**Figure 35.** Missouri river otter harvest distribution among watersheds during the 2022-2023 trapping season.



**Figure 36.** Ages of otter harvested from 2016 to 2023 stacked by age. Age is determined by analysis of teeth submitted voluntarily by trappers.



**Figure 37.** Ages of otter harvested from 2023 stacked by age. Age is determined by analysis of teeth submitted voluntarily by trappers.

**Table 3.** Missouri river otter harvest distribution among watersheds during the 2022-2023 trapping season

Watershed	Number Harvested	Percent of Harvest	Watershed	Number Harvested	Percent of Harvest
Big Piney River	0	0.00%	Mississippi R. (upper)	7	1.10%
Big River	4	0.63%	Missouri River	86	13.52%
Black River	1	0.16%	Moreau River	8	1.26%
Blackwater River	29	4.56%	N. Fork White River	0	0.00%
Bourbeuse River	27	4.25%	Niangua River	0	0.00%
Chariton River	129	20.28%	Nodaway River	0	0.00%
Cuivre River	51	8.01%	North River	2	0.31%
Current River	1	0.16%	Osage River East	18	2.83%
Eleven Point River	0	0.00%	Osage River West	86	13.52%
Elk River	0	0.00%	Platte River	7	1.10%
Fabius River	4	0.63%	Pomme de Terre River	1	0.16%
Fox River	0	0.00%	S. Grand River	16	2.52%
Gasconade River	11	1.73%		0	0.00%
Grand River	67	10.53%	Salt River	2	0.31%
Headwater Diversion	0	0.00%	Spring River	12	1.89%
Jacks Fork River	0	0.00%	St. Francis River	3	0.47%
James River	0	0.00%	Thompson River	12	1.89%
Lamine River	2	0.31%	White River	0	0.00%
Locust Creek	4	0.63%	Wyaconda River	0	0.00%
Meramec River	7	1.10%	Unknown	17	2.67%
Mississippi R. (lower)	22	3.46%	<b>Total Harvest</b>	<b>636</b>	<b>100%</b>

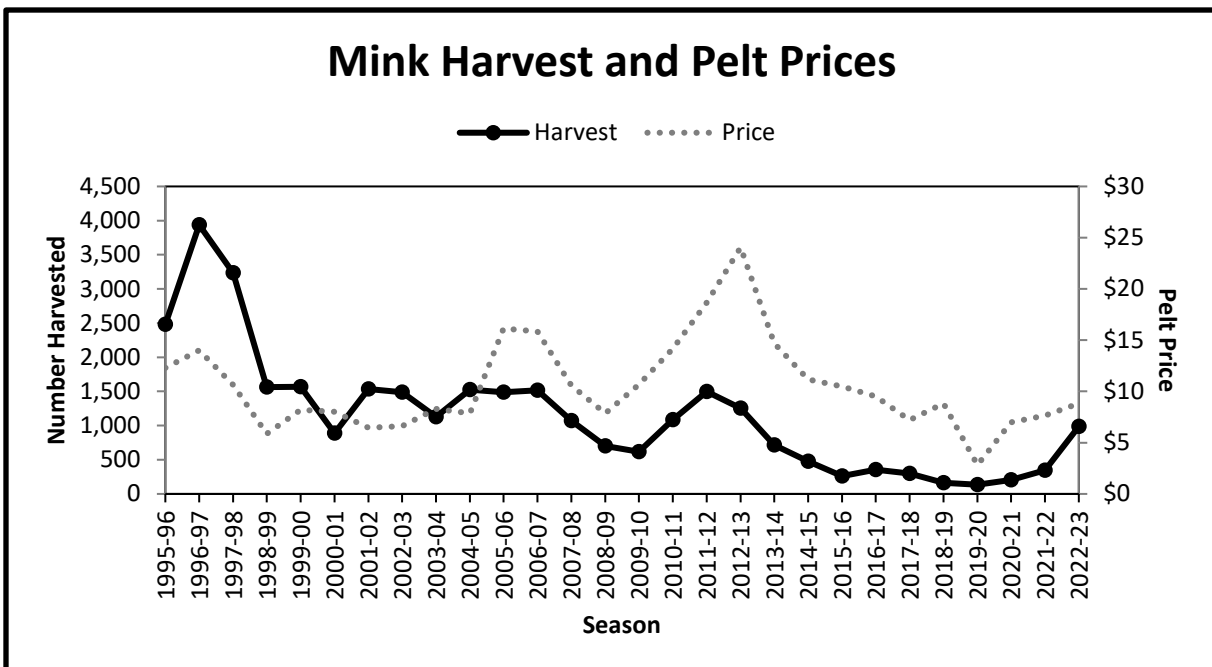
## Mink, Muskrat, and Beaver Harvest and Population Trends

**Mink, muskrat, and beaver harvests** continue to fluctuate in somewhat predictable ranges. Since 1990, mink harvests have varied from about 150 – 1,500 (Figure 38), muskrat harvests from 5,000 – 20,000 (Figure 39), and beaver harvests from 2,000 – 10,000 (Figure 40). Historically, mink and muskrat numbers have fluctuated widely; however, habitat degradation has limited populations and subsequently reduced harvest. Beavers are a longer-lived species and less vulnerable to depredation; harvest rates are more likely related to pelt values.



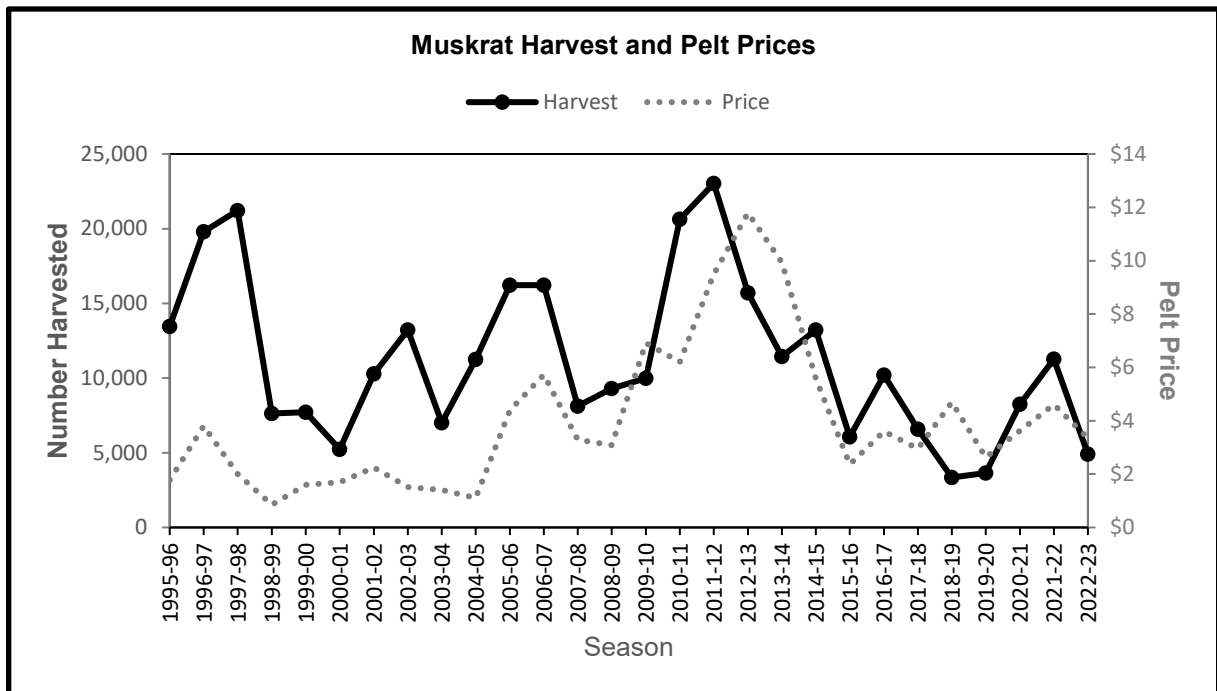
Trappers harvested 985 mink (Figure 38), 4,908 muskrats (Figure 39), and 6,707 beavers (Figure 40) during the 2022-2023 season. Mink prices increased to \$8.84. Muskrat prices dropped to \$3.35. And beaver prices increased to \$12.51.

**Population trends** for these species are derived from the Bowhunter Observation Survey. Population trend data are low (Figure 41), in part, because these animals are associated with water bodies and may not be a common sighting for archers and are rarely present in Sign Station Surveys. Given that, trends of mink, muskrat, and beaver suggest populations are stable with slight declines for beaver.

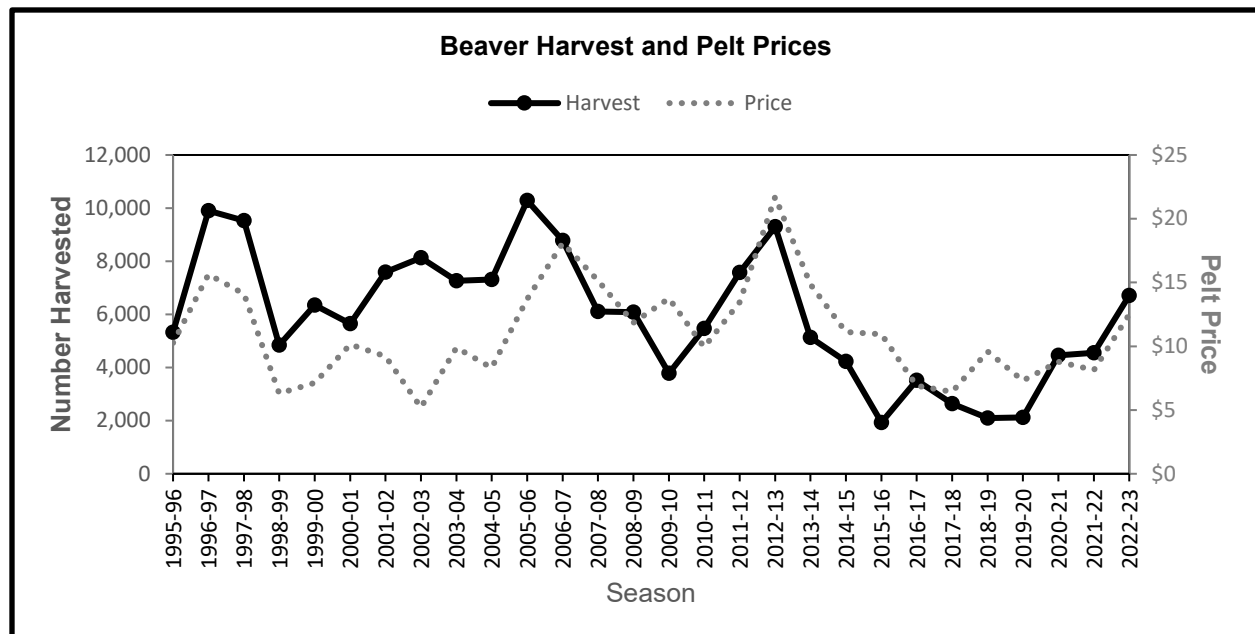


**Figure 38.** Missouri mink harvest trends since 1994 compared to average pelt prices. Harvest estimates are derived from fur buyer records. Annual pelt prices are the average price from the Missouri Trappers Association Fur Auction.

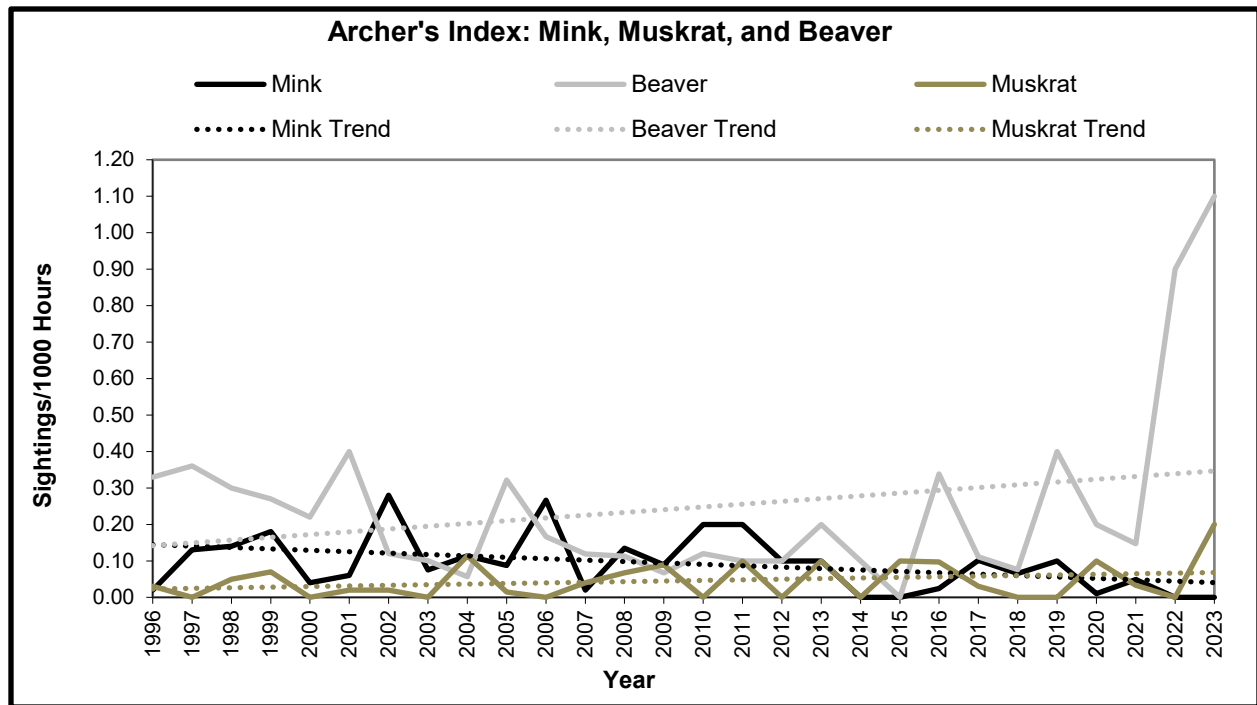




**Figure 39.** Comparison of Missouri muskrat harvest and pelt prices over the last 50 years. Harvest estimates are derived from fur buyer records. Annual pelt prices are the average price from the Missouri Trappers Association Fur Auction.




**Figure 40.** Comparison of Missouri beaver harvest and pelt prices over the last 50 years. Harvest estimates are derived from fur buyer records. Annual pelt prices are the average price from the Missouri Trappers Association Fur Auction.



**Figure 41.** Mink, muskrat, and beaver population trends based on the Archer's Index, derived from the MDC Bowhunter Observation Survey.





## Rare Furbearers of Missouri

Missouri residents are fortunate to reside in a state with abundant natural resources, including wildlife, and an exceptional diversity of furbearing species. As a result, opportunities for observing wildlife are plentiful while recreating or driving through the state. Of the many furbearer species that reside in Missouri, there are four species (American badgers, spotted skunks, least weasels, and long tailed weasels) that have become less common to see over the year. In the case of the spotted skunk, least weasel, and long-tailed weasel, recently (within the last 3 decades) exhibited declines in population trends and harvest, thus MDC decided to close trapping for those species due to this significant decline. Badger cans still be harvested, but annual pelts sold has declined over the years. Due to these four species being less common to see, MDC put out a call to all Missouri residents and people passing through the state to report observations of these rare furbearers (Figure 42) to help MDC track distribution trends in these species. More information about these rare furbearers can be found below.



## Have you seen a rare Missouri furbearer?

The Missouri Department of Conservation is taking reports for the following species...

<b>American Badger</b>		<p>Flattened body with short, stocky legs. Face is distinctive with black patches, whitish chin and throat, and a prominent white stripe down the head. Weigh 8 to 20 pounds.</p>
<b>Spotted Skunk</b>		<p>Distinct white spot in the center of the forehead and in front of each ear. Broken stripes down the body give a "spotted appearance." Weigh 0.5 to 2 pounds.</p>
<b>Least Weasel</b>		<p>Long, tubular shape with a tail that is 25% of the head-body length. May turn white in the winter, in summer have brown pelts with white feet and underside. Found in northern Missouri and weigh 1 to 3.5 ounces.</p>
<b>Long-tailed Weasel</b>		<p>Tail is 50% or more of the head-body length. May turn white in the winter, but have brown pelts in the summer with cream-yellow undersides. Found statewide and weigh 3 to 16 ounces.</p>

### HOW TO REPORT

**MDC needs the following information with report submissions:**

- ◆ Date and Time of observation
- ◆ Number of individuals observed and number of young in group
- ◆ Location (county and estimated GPS coordinates)
- ◆ Sex, if known
- ◆ Status (alive, trapped, road-killed, etc.)
- ◆ Name, address, phone number, and/or email

**Report Sightings to:**

**Nathaniel Bowersock**  
*Furbearer Biologist*  
*Missouri Department of Conservation*  
*Central Regional Office*  
*3500 East Gans Road*  
*Columbia, MO 65201*  
*(573) 815-7900 ext. 2903*  
*Nathaniel.Bowersock@mdc.mo.gov*

**Additional Information:**

Badger can be legally harvested in Missouri during the established season. Please report any badger sightings, captures or road-kill animals.

There is **NO** trapping or hunting season for weasels or spotted skunks. Please report any sightings, photos, or road-kill animals to the Department.

If you accidentally trap a weasel or spotted skunk and the animal is alive, it must be immediately released. Please report the incidental capture. If you accidentally trap a weasel or spotted skunk and the animal is dead, the entire carcass must be turned over to your local conservation agent.

Figure 42. Rare furbearer sightings request flier distributed by Missouri Department of Conservation.

## American Badger

**The American badger** is a native, but uncommon, furbearing species in Missouri and is state ranked as a **Vulnerable Species of Conservation Concern** by MDC. American badgers are a fossorial (burrowing animal) species and require habitat where suitable soil is available for digging burrows for both them and for hunting prey. American badgers can be found throughout the state in any of the **8 zoological regions** (Figure 43), but the sandier soils they prefer occurs primarily in four regions: Western Prairie, Northwest Prairie, Northern Riverbreaks, and Northeast Riverbreaks. Consequently, the bulk of the recorded observations in the Missouri Natural Heritage database occur in these four regions.

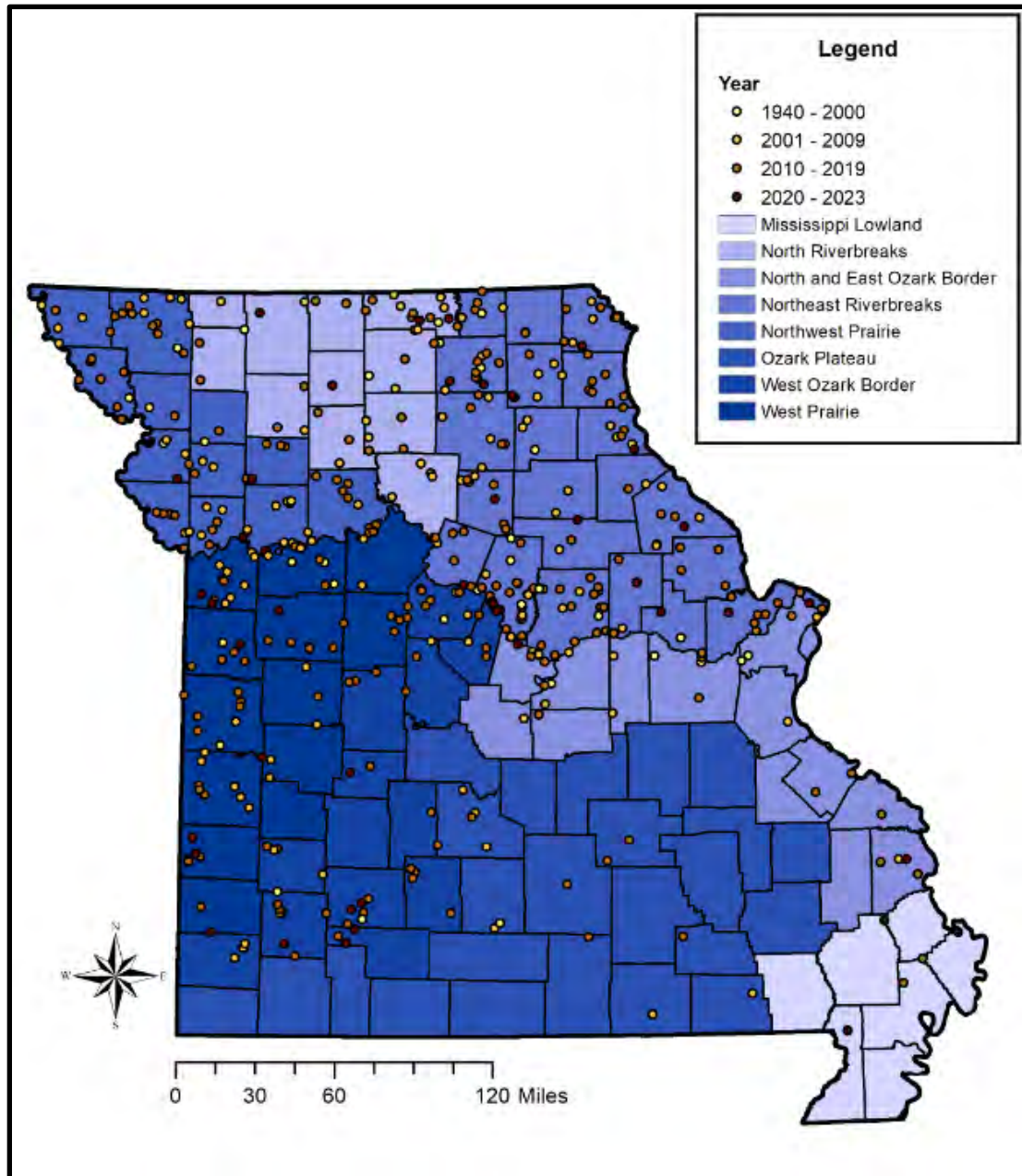


Considered a furbearing species in Missouri, American badgers are harvested annually during the trapping season. However, harvest has historically been low compared to other furbearers because American badger pelts are not as desirable compared to other, more valuable pelts (Figure 44). Furthermore, most American badger harvest occurs because of human-wildlife conflict. In recent decades, harvest has declined and likely is a result of several factors. First, grasslands and prairies, where the soil substrate is suitable for burrowing has been

converted to intensive agriculture, which has greatly reduced the habitat and prey species badgers prefer. Second, interest in trapping also has declined and fewer individuals participate in trapping.

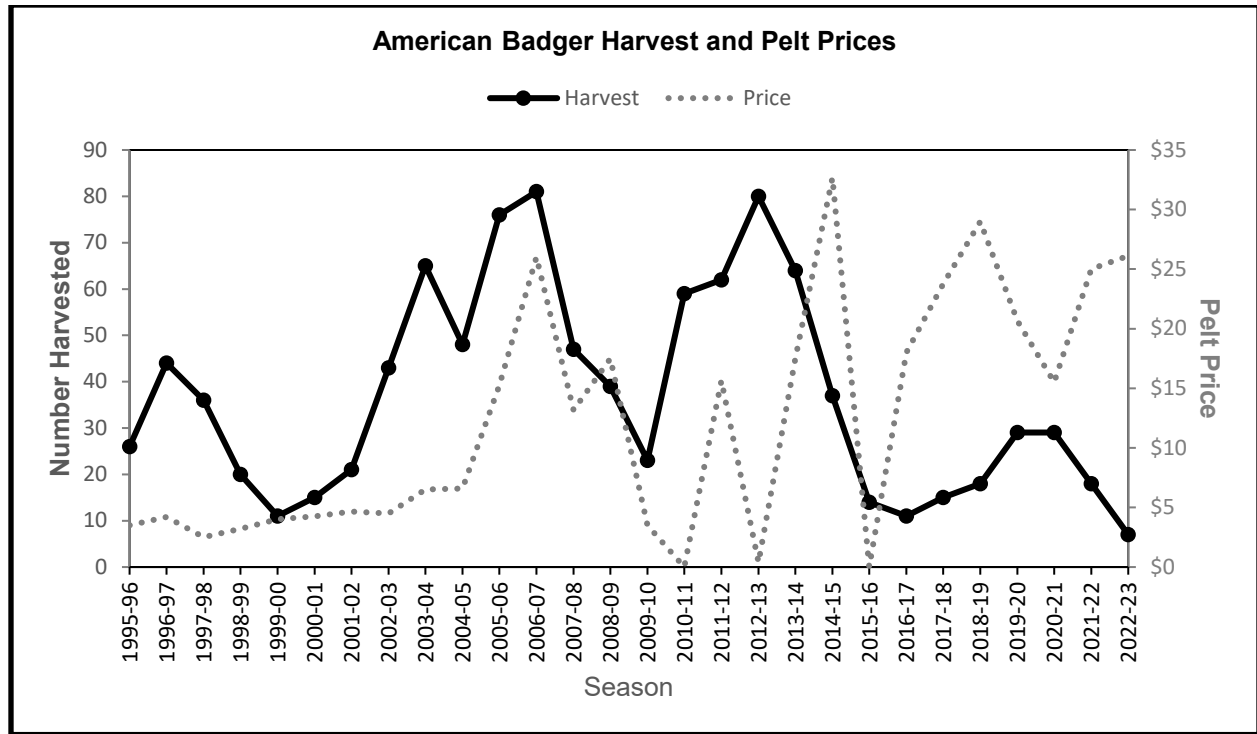
To offset the reduced number of observations and low harvest, MDC made a concerted effort to collect and record American badger observations and specimens from citizens (e.g., trappers) and MDC personnel from 2009 through 2011 to better understand the demographics and distribution of American badgers in Missouri. As a result, more than 400 records occur within the Missouri Natural Heritage database allowing the Department to determine where the species is most prevalent in the state. In 2017, MDC once again made a call for American badger observations with the distribution of a flyer to the Missouri Trappers Association, MDC Regional Offices and Nature Centers, and Missouri DNR State Parks (Figure 42). This renewed effort produced 101 new sightings of American badgers across the state, but primarily in the four suitable zoological regions mentioned previously (Figure 43). MDC will continue to collect information about American badgers from citizens and MDC personnel.





**Figure 43.** American badger sightings in the Missouri Natural Heritage database range from the 1940s to present and occur in all 8 zoological regions.





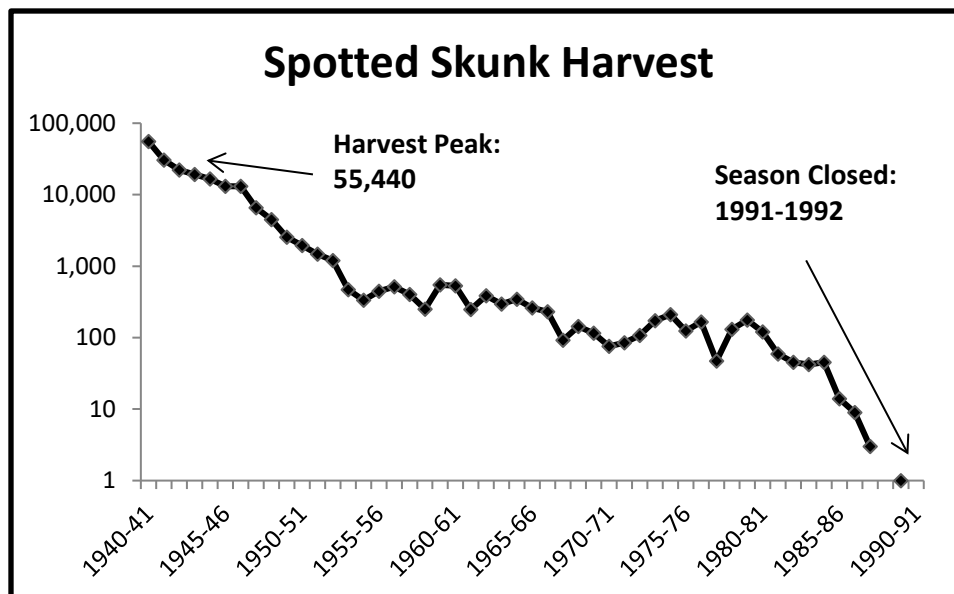
**Figure 44.** American badger harvest and pelt prices in Missouri since 1995. No sales occurred in 2010-11, 2012-13, and 2015-16.

## Spotted Skunk

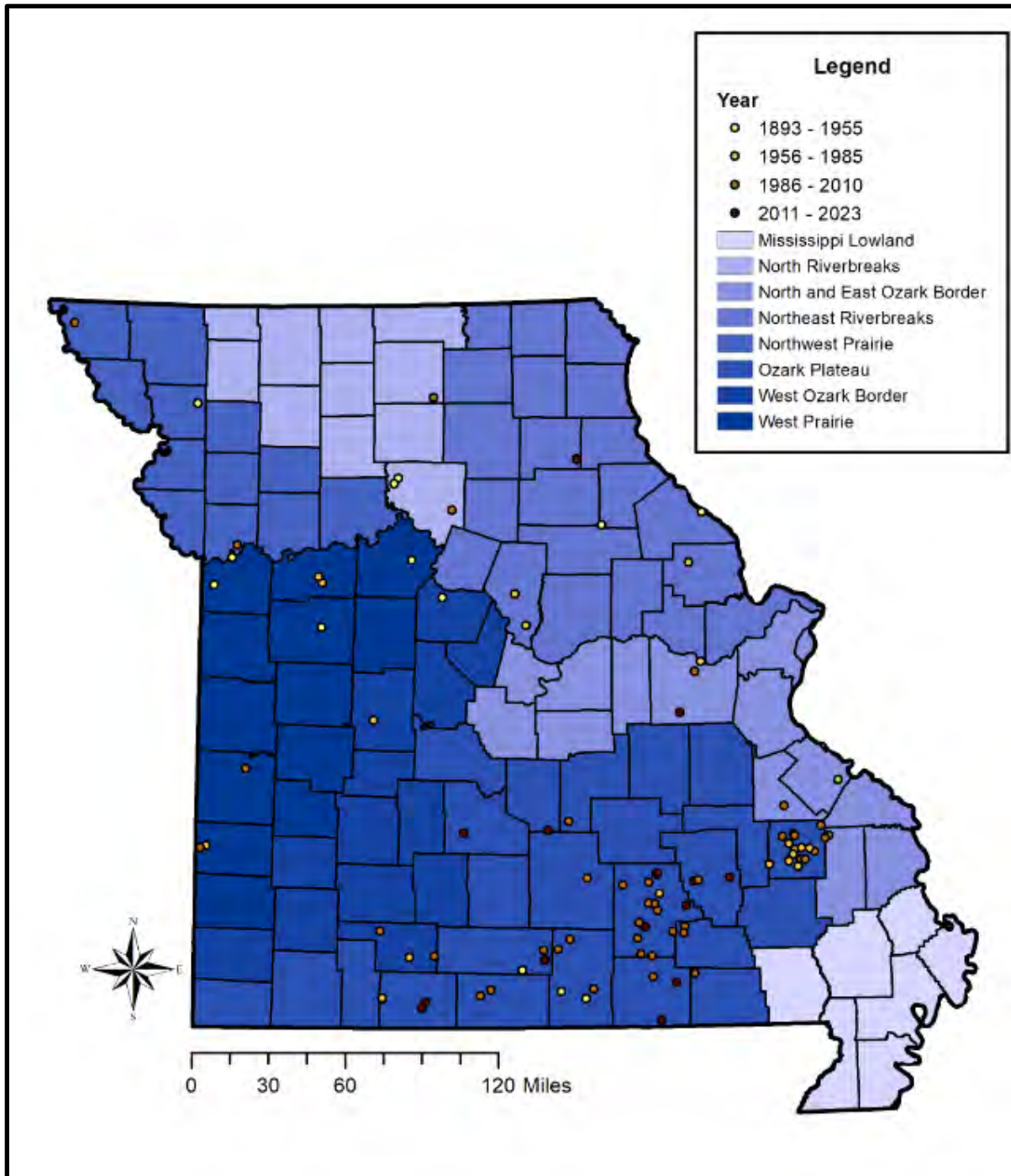
The subspecies of **eastern spotted skunk** native to Missouri is the plains spotted skunk. This species was once abundant, albeit not as abundant as their striped cousins, and harvest of 30,000 or more individuals each year was common in Missouri. Declines in annual harvest began in the late 1940s as total harvest dropped precipitously from a high point of more than 55,000 to less than 10,000 individuals over a period of 7 years. After another 5 years, annual harvest dipped to less than 1,000 individuals until harvest dropped to less than 10 each year and MDC closed the season for spotted skunks in 1991-92 (Figure 45). Currently, the plains spotted skunk is listed as **state Endangered** and state ranked as a



**critically imperiled Species of Conservation Concern** in Missouri. Records of spotted skunk sightings are maintained in the Missouri Natural Heritage database, which tracks locations of all Missouri species of conservation concern (Figure 46).



**Figure 45.** Historic spotted skunk harvest in Missouri from the peak harvest in 1940-1941 to the close of the spotted skunk trapping season in 1991-92.

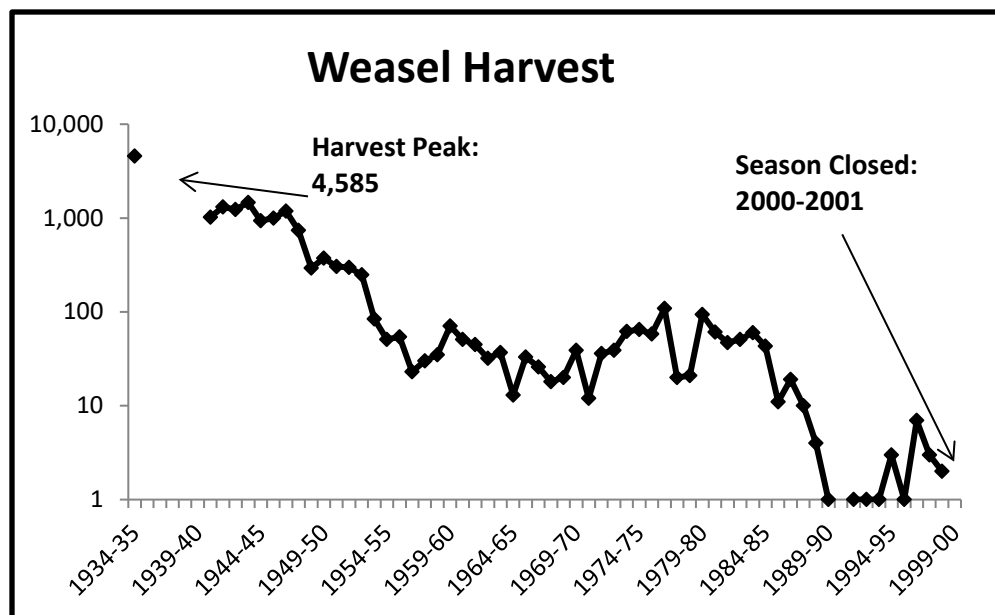


**Figure 46.** Plains spotted skunk sighting locations from the Missouri Natural Heritage Database.

## Least and Long-tailed Weasel

Northern Missouri is the southern extent of the **least weasel's** range; therefore, the species was never widespread in the state. Although traditionally considered a furbearer, Missouri's *Wildlife Code* does not define least weasels as a furbearing or game species. Conversely, **long-tailed weasels** can be found from central Canada into portions of South America and thus, can be found throughout the state of Missouri. Long-tailed weasels are the primary target of weasel trapping efforts in Missouri, but harvest records indicate an overall 'weasel' category suggesting take of both species occurred. Weasels were never a large proportion of the fur harvest in Missouri, but harvest peaked in the mid-1930s before steadily declining until the season was closed in 2000-01 (Figure 47).

Currently, both weasel species are classified as **Species of Conservation Concern** and state-ranked as **Vulnerable**. Like spotted skunks, sightings of both weasel species are maintained in the Missouri Natural Heritage database providing an indication of their distributions in Missouri (Figures 48 and 49).



**Figure 47.** Historic weasel harvest in Missouri from the harvest peak in 1934-35 to the close of the weasel trapping season in 2000-01 with a gap in harvest data from 1935-36 through 1939-40.

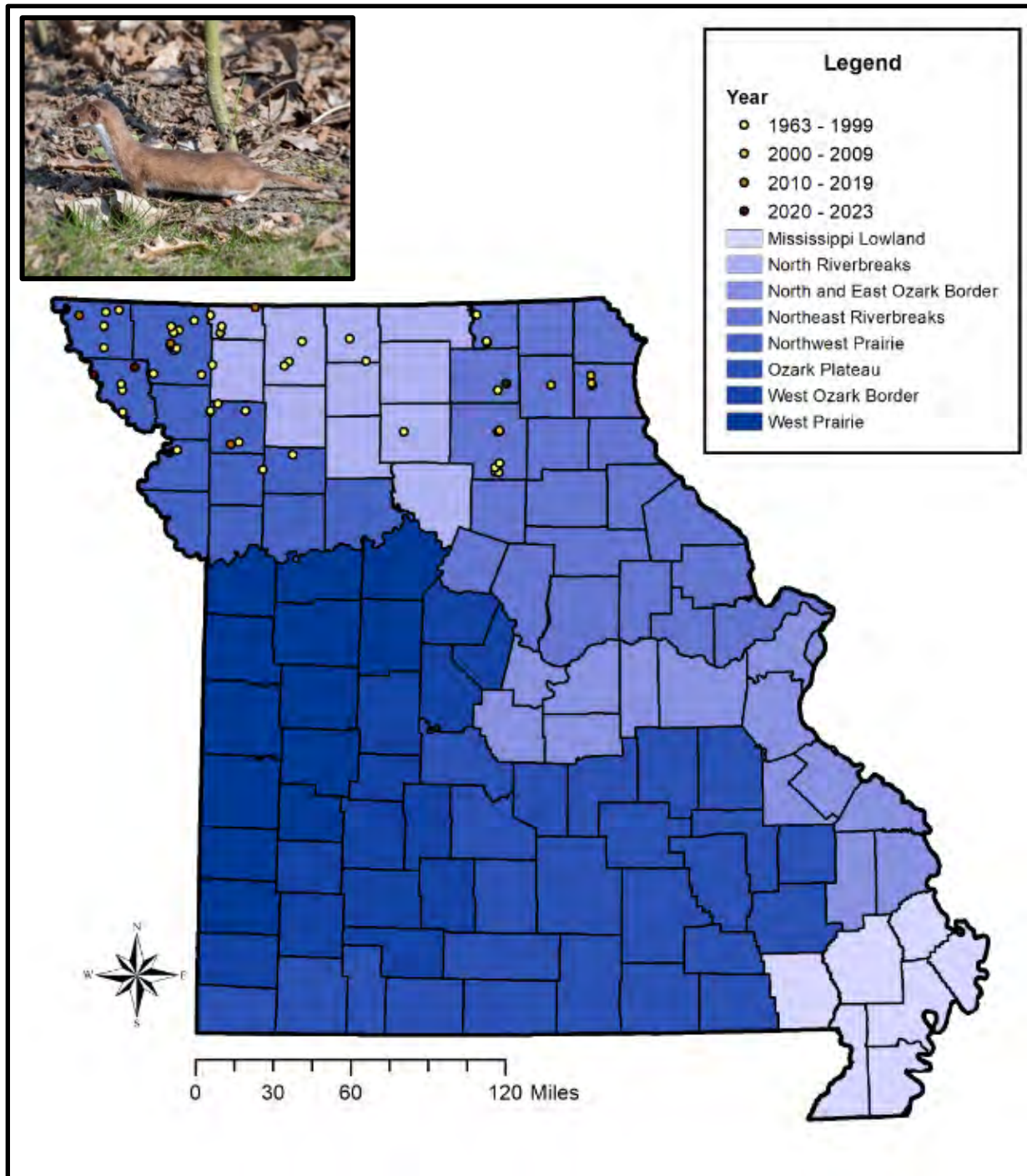
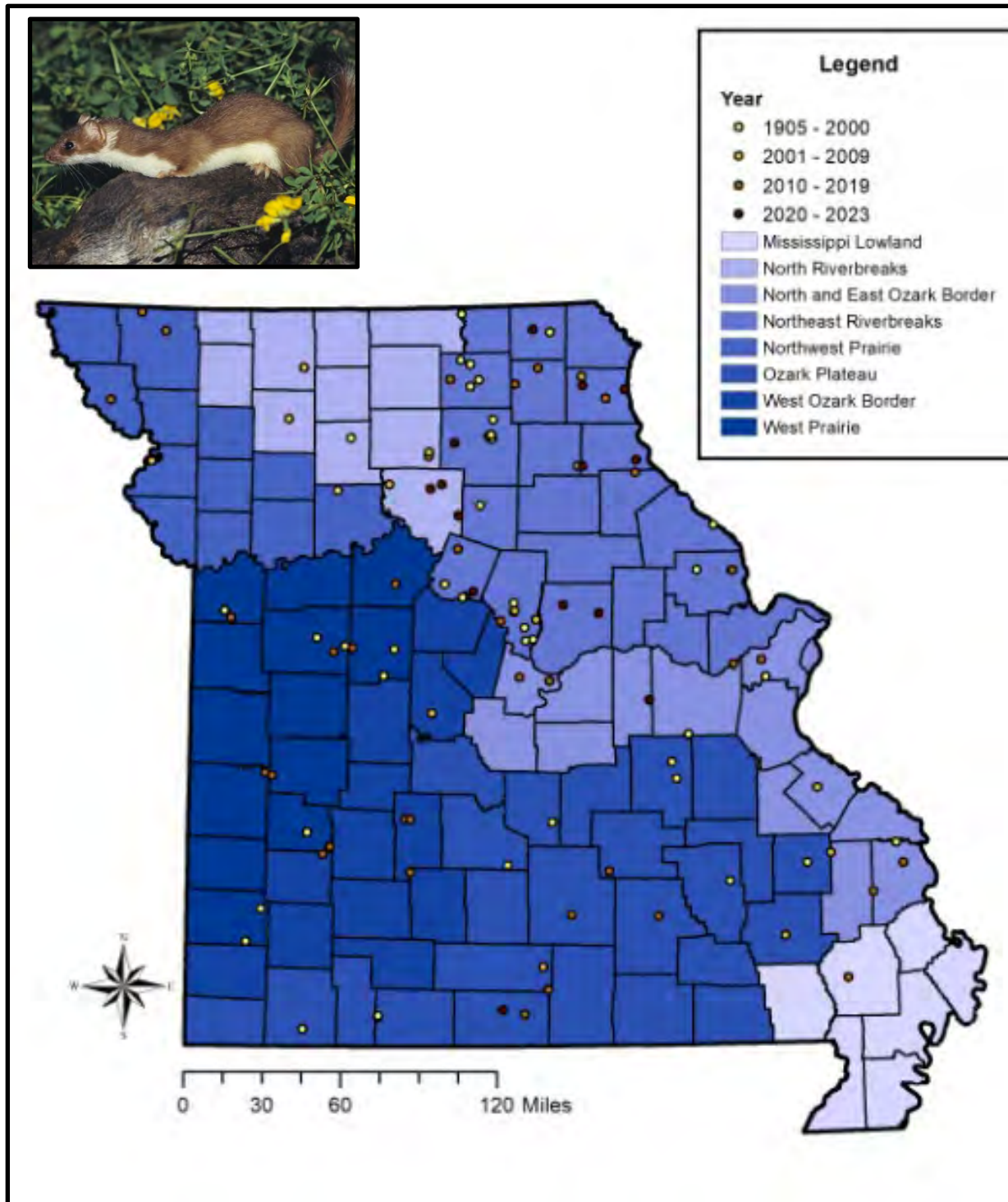


Figure 48. Least weasel sighting locations in the Missouri Natural Heritage database.





**Figure 49.** Long-tailed weasel sighting locations in the Missouri Natural Heritage database, including 26 sightings since 2017.

## State Furbearer Records

**Official furbearer weight records** began in 2011. Candidate furbearers must be weighed at MDC's Central Regional Office in Columbia for or verified by MDC staff on a certified scale. Only **one new** record-sized furbearer was harvested in the 2022-2023 hunting and trapping seasons (Table 4). Couper Simmons set the record for Raccoon at 35 lbs. Please note that some larger weights may have occurred prior to official record keeping in 2011 but cannot be considered record weights at present.



**Table 4.** Current record-holders and weights of record furbearing species. \* Indicates new record.

Current Record Furbearers						
Species	Sex	Date Taken	County Taken	Weight (lbs.)	Ounces (oz.)	Hunter/Trapper
Badger	M	12/17/2014	Perry	28	14.4	Corey Robinson
Badger	M	11/21/2017	Randolph	28	14.4	Glen and Kyle Fessler
Beaver	F	3/8/2020	Chariton	81	0	Clay Creech
Bobcat	M	12/22/2019	Worth	50	0	Harold Owens
Coyote	M	1/13/2020	Maries	51.5	0	Bradley Deeken
Gray Fox	M	1/2/2016	Marion	12	11	Lance Hudson & Bobby Gruenloh
Mink	M	1/19/2013	Ralls	5	3.2	Jeff Thompson
Muskrat	M	1/29/2020	Cass	4	5.3	Dennis Hull
*Nutria	M	2/10/2024	New Madrid	19	11	Justin McKinney
Opossum	M	12/18/2016	Lincoln	16	2.6	Jacob Doll
Raccoon	M	12/11/2022	Worth	35	0	Couper and Hunter Simmons
Red Fox	F	12/29/2018	Cape Girardeau	13	5.7	Jake Partridge
River Otter	M	2/4/2019	Ozark	32	11.2	Sam Day
Striped Skunk	M	12/4/2018	Moniteau	9	14	Ethan Starr

## Appendix A

Missouri hunter hours and furbearer population indices based on archer's diaries, 1983 to 2023.

YEAR	Hunter Hours	Coyote	Red Fox	Gray Fox	Bobcat	Raccoon	Virginia Opossum	Striped Skunk	Mink	Beaver	Muskrat	Weasel	Badger	River Otter	Black Bear
1983	55,374	20.0	6.5	5.1	1.7	23.8	12.6	5.0	0.7	0.3	0.5	0.1	0.1	0.0	0.0
1984	32,746	18.8	6.8	3.1	1.2	16.9	6.4	3.5	0.3	0.3	0.1	0.0	0.1	0.0	0.0
1985	30,990	20.1	5.3	2.8	1.5	15.4	8.6	4.2	0.5	0.4	0.4	0.1	0.1	0.1	0.0
1986	51,727	23.5	5.7	2.8	1.5	15.3	6.9	3.5	0.3	0.4	0.0	0.0	0.0	0.0	0.0
1987	57,457	23.5	4.5	2.5	2.0	23.3	10.1	3.0	0.3	0.7	0.2	0.1	0.1	0.1	0.0
1988	84,497	22.4	4.7	2.4	1.7	16.7	4.8	2.7	0.3	0.6	0.1	0.0	0.1	0.1	0.0
1989	72,992	21.1	5.1	2.4	1.8	19.6	5.6	3.5	0.1	0.6	0.1	0.0	0.2	0.1	0.0
1990	72,227	23.6	4.9	2.3	2.9	24.0	7.2	3.5	0.2	0.4	0.1	0.0	0.1	0.1	0.0
1991	64,434	26.1	4.7	3.0	3.3	30.5	11.7	4.0	0.3	0.3	0.1	0.0	0.1	0.0	0.1
1992	64,452	22.5	4.7	2.3	2.9	24.3	8.9	2.8	0.6	0.7	0.1	0.0	0.1	0.3	0.0
1993	53,857	19.7	4.2	2.1	3.2	28.1	7.7	3.7	0.2	0.5	0.2	0.0	0.1	0.3	0.0
1994	49,102	21.0	5.1	2.0	3.4	32.0	7.6	3.2	0.1	0.5	0.2	0.0	0.2	0.2	0.0
1995	66,106	22.3	4.6	2.1	3.8	36.5	9.6	3.6	0.1	0.3	0.1	0.0	0.1	0.3	0.1
1996	60,077	19.6	4.5	1.8	4.1	29.7	6.6	2.7	0.0	0.3	0.0	0.0	0.1	0.5	0.0
1997	47,816	18.0	4.0	2.0	4.5	31.2	7.4	2.7	0.1	0.4	0.0	0.0	0.1	0.6	0.0
1998	43,152	20.8	4.1	2.4	4.4	33.0	10.6	4.2	0.1	0.3	0.1	0.0	0.2	0.3	0.1
1999	44,012	29.2	3.7	2.2	4.8	45.9	12.5	4.0	0.2	0.3	0.1	-	0.1	0.5	-
2000	50,795	20.0	3.7	2.0	4.9	32.1	8.1	3.3	0.0	0.2	0.0	0.0	0.1	0.3	0.0
2001	47,023	19.5	3.6	2.1	5.2	38.7	8.2	4.7	0.1	0.4	0.0	0.0	0.1	0.3	0.0
2002	42,826	24.6	3.8	1.5	7.9	42.6	14.4	5.6	0.3	0.1	0.0	0.0	0.1	0.8	0.1
2003	39,964	20.5	2.7	1.5	6.0	37.9	7.2	3.2	0.1	0.1	0.0	0.0	0.2	0.6	0.0
2004	35,071	17.6	2.8	1.1	4.7	37.3	7.9	2.6	0.1	0.1	0.1	0.0	0.1	1.2	0.0
2005	68,440	21.2	2.8	1.3	5.6	37.3	8.5	2.5	0.1	0.3	0.0	0.0	0.1	0.5	0.0
2006	60,040	22.2	3.2	1.3	6.9	54.4	14.4	3.8	0.3	0.2	0.0	0.0	0.1	0.5	0.0
2007	50,390	19.8	3.0	1.5	5.2	40.0	9.4	4.0	0.0	0.1	0.0	0.0	0.1	0.4	0.0
2008	44,471	16.3	2.6	1.2	5.0	41.5	7.8	3.7	0.1	0.1	0.1	0.0	0.4	0.3	0.0
2009	44,919	20.6	2.6	1.2	4.9	42.0	12.4	4.4	0.1	0.1	0.1	0.0	0.2	1.2	0.1
2010	42,907	27.1	2.1	1.0	5.9	60.6	12.9	3.1	0.2	0.1	0.0	0.0	0.2	0.7	0.0

YEAR	Hunter Hours	Coyote	Red Fox	Gray Fox	Bobcat	Raccoon	Virginia Opossum	Striped Skunk	Mink	Beaver	Muskrat	Weasel	Badger	River Otter	Black Bear
2011	41,370	26.1	2.7	1.1	6.6	70.1	16.6	4.6	0.2	0.1	0.1	0.0	0.2	0.9	0.0
2012	63,621	24.4	3.6	1.4	5.3	45.8	7.1	5.6	0.1	0.1	0.0	0.0	0.3	1.1	0.0
2013	68,674	16.2	2.1	1.4	4.0	33.3	5.7	2.9	0.1	0.2	0.1	0.0	0.1	0.6	0.1
2014	60,560	20.3	2.5	1.3	3.4	37.5	5.8	2.8	0.0	0.1	0.0	0.0	0.3	0.3	0.1
2015	58,203	26.2	2.5	2.0	5.0	55.2	13.4	3.8	0.0	0.0	0.1	0.0	0.3	0.6	0.1
2016	41,409	23.3	2.9	1.5	4.5	36.6	10.2	4.4	0.0	0.3	0.1	-	0.2	0.2	0.2
2017	98,898	24.3	3.4	2.9	5.0	48.5	11.8	2.5	0.1	0.1	0.0	-	0.2	0.6	0.1
2018	91,936	25.4	3.6	1.8	4.8	35.0	8.4	2.1	0.1	0.1	-	0.0	0.2	0.8	0.2
2019	87,821	25.2	3.3	3.9	5.4	47.6	13.3	2.3	0.1	0.4	0.0	-	0.1	0.6	0.1
2020	80,657	22.8	2	.07	7.2	49.3	13.0	3.1	0.1	0.2	0.1	0	0.1	1.1	0.3
2021	61,315	23.2	1.5	2.8	4.8	41.3	7.2	2.0	0.0	0.1	0.0	0.0	0.0	0.7	0.4
2022	45,088	23.5	1.7	1.1	6.3	53.1	11.6	2.5	0.0	0.9	0.0	0.0	0.1	1.1	0.1
2023	36,204	19.5	1.4	0.6	5.0	42.4	7.0	1.9	0.0	1.1	0.2	0.0	0.1	1.0	0.2

## Appendix B.

Missouri furbearer species population indices (sightings/1,000 hours) by county derived from the MDC Bowhunter Observation Survey in 2023.

County	Coyote	Red Fox	Gray Fox	Bobcat	Raccoon	Virginia Opossum	Striped Skunk	Mink	Beaver	Muskrat	Weasel	Badger	River Otter	Black Bear
Adair	26	5	0	2	16	5	0	0	0	0	0	0	0	0
Andrew	44	0	0	16	120	16	4	0	0	0	0	0	0	0
Atchison	43	0	0	0	32	43	0	0	0	0	0	0	0	0
Audrain	22	0	0	3	145	5	0	0	0	0	0	0	3	0
Barry	38	3	0	20	64	0	0	0	0	0	0	0	0	0
Barton	101	17	0	0	135	0	0	0	0	0	0	0	0	0
Bates	22	3	0	25	87	9	0	0	3	0	0	0	0	0
Benton	18	0	0	0	10	3	0	0	0	0	0	0	2	0

County	Coyote	Red Fox	Gray Fox	Bobcat	Raccoon	Virginia Opossum	Striped Skunk	Mink	Beaver	Muskrat	Weasel	Badger	River Otter	Black Bear
Bollinger	13	0	0	0	11	0	0	0	2	0	0	0	13	0
Boone	27	3	0	14	20	0	0	0	0	0	0	0	0	0
Buchanan	35	0	0	4	20	16	0	0	0	4	0	0	12	0
Butler	19	8	0	3	8	8	5	0	0	0	0	0	0	0
Caldwell	0	0	0	8	87	8	0	0	0	0	0	0	0	0
Callaway	8	0	0	4	12	0	4	0	0	0	0	0	0	0
Camden	14	6	0	6	6	0	0	0	0	0	0	0	3	0
Cape Girardeau	15	0	0	0	32	2	6	0	0	0	0	0	0	0
Carroll	46	0	0	0	164	9	0	0	5	0	0	0	0	0
Carter	17	0	0	0	4	0	0	0	0	0	0	0	8	0
Cass	38	0	0	3	86	21	6	0	0	0	0	0	3	0
Cedar	13	0	0	25	139	13	0	0	0	0	0	0	0	0
Chariton	32	0	0	5	14	9	0	0	0	0	0	0	0	0
Christian	0	0	0	5	15	0	0	0	0	0	0	0	0	0
Clark	21	5	0	0	21	0	2	0	0	0	0	0	0	0
Clay	68	0	0	5	106	5	0	0	0	0	0	0	0	0
Clinton	10	0	0	0	48	10	0	0	0	0	0	0	0	0
Cole	28	0	8	0	41	4	0	0	0	0	0	0	0	0
Cooper	50	0	0	5	99	3	0	0	8	0	0	0	0	0
Crawford	8	1	1	1	12	3	0	0	0	0	0	0	0	0
Dade	39	0	0	0	20	0	0	0	0	0	0	0	0	0



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County	Coyote	Red Fox	Gray Fox	Bobcat	Raccoon	Virginia Opossum	Striped Skunk	Mink	Beaver	Muskrat	Weasel	Badger	River Otter	Black Bear
Dallas	13	0	0	13	0	13	0	0	0	0	0	0	0	0
Daviess	9	0	0	12	49	20	0	0	29	0	0	0	3	0
Dekalb	60	0	0	0	36	0	12	0	0	0	0	0	0	0
Dent	27	0	0	9	16	11	0	0	0	0	0	0	0	0
Douglas	0	0	0	0	0	9	0	0	9	0	0	0	0	0
Dunklin	103	0	0	0	0	0	0	0	0	0	0	0	0	0
Franklin	13	1	3	3	25	2	2	0	2	4	0	0	0	0
Gasconade	9	2	0	9	21	0	7	0	0	0	0	0	0	0
Gentry	25	4	4	8	168	45	4	0	0	0	0	0	4	0
Greene	5	10	0	5	64	10	5	0	0	0	0	0	5	0
Grundy	125	0	0	0	375	0	0	0	0	0	0	0	0	0
Harrison	62	0	0	5	80	14	5	0	0	0	0	0	0	0
Henry	24	0	0	3	65	7	0	0	3	0	0	0	0	0
Hickory	5	20	0	0	5	0	0	0	0	0	0	0	5	0
Holt	0	0	0	0	211	0	0	0	0	0	0	0	0	0
Howard	15	0	0	2	31	2	0	0	0	0	0	0	0	0
Howell	0	0	2	6	14	0	6	0	0	0	0	0	0	0
Iron	0	0	0	25	19	0	0	0	0	0	0	0	0	0
Jackson	19	0	0	3	39	3	6	0	0	0	0	0	6	0
Jasper	45	0	22	0	30	37	30	0	0	0	0	0	15	0
Jefferson	11	1	0	1	19	0	0	0	0	0	0	0	0	0

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County	Coyote	Red Fox	Gray Fox	Bobcat	Raccoon	Virginia Opossum	Striped Skunk	Mink	Beaver	Muskrat	Weasel	Badger	River Otter	Black Bear
Johnson	9	0	0	14	23	9	0	0	4	0	0	0	0	0
Knox	18	0	0	4	117	12	0	0	0	0	0	0	1	0
Laclede	13	0	4	8	4	0	0	0	0	0	0	0	0	13
Lafayette	0	0	0	8	75	66	0	0	0	0	0	0	0	0
Lawrence	46	0	0	8	54	4	0	0	0	0	0	0	0	0
Lewis	0	0	0	22	67	6	0	0	0	0	0	0	0	0
Lincoln	24	0	0	1	7	0	3	0	4	0	0	0	1	0
Linn	8	0	0	0	40	0	0	0	0	0	0	0	0	0
Livingston	34	0	0	0	68	14	0	0	0	0	0	0	0	0
McDonald	0	0	0	6	12	0	0	0	0	0	0	0	0	0
Macon	11	0	0	5	64	5	0	0	0	0	0	0	0	0
Madison	5	5	0	0	11	5	5	0	0	0	0	0	0	5
Maries	0	0	0	0	47	0	0	0	0	0	0	0	0	0
Marion	58	8	0	12	89	4	0	0	0	0	0	0	0	0
Mercer	51	9	0	14	93	5	5	0	0	0	0	0	0	0
Miller	31	0	0	0	23	0	0	0	0	0	0	0	0	0
Mississippi	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moniteau	86	0	0	0	22	0	0	0	0	0	0	0	0	0
Monroe	45	0	0	5	73	18	2	0	0	0	0	0	2	0
Montgomery	32	0	4	9	82	20	0	0	0	0	0	0	0	0
Morgan	7	0	0	2	16	0	0	0	2	0	0	0	7	0

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County	Coyote	Red Fox	Gray Fox	Bobcat	Raccoon	Virginia Opossum	Striped Skunk	Mink	Beaver	Muskrat	Weasel	Badger	River Otter	Black Bear
New Madrid	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Newton	36	4	0	8	15	6	2	0	0	0	0	0	0	0
Nodaway	47	0	0	12	181	12	4	0	0	0	0	4	0	0
Oregon	6	0	0	0	42	11	3	0	0	0	0	0	0	11
Osage	0	0	0	6	6	3	6	0	3	3	0	0	0	0
Ozark	0	0	0	17	8	0	0	0	0	0	0	0	0	0
Pemiscot	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Perry	23	0	0	3	49	0	6	0	0	0	0	0	0	0
Pettis	6	0	0	13	135	26	0	0	0	0	0	0	3	0
Phelps	4	0	7	7	18	7	4	0	0	0	0	0	4	0
Pike	20	0	1	1	64	13	1	0	0	0	0	0	0	0
Platte	49	0	0	3	127	9	0	0	0	0	0	0	0	0
Polk	71	0	0	6	3	0	3	0	0	0	0	0	0	0
Pulaski	0	0	0	0	8	3	0	0	0	0	0	0	0	0
Putnam	15	0	0	2	15	26	0	0	0	0	0	0	0	0
Ralls	14	0	0	2	25	2	0	0	0	0	0	0	0	0
Randolph	4	4	0	0	17	4	0	0	0	0	0	0	0	0
Ray	13	0	0	0	146	0	0	0	0	0	0	0	0	0
Reynolds	0	0	0	0	25	0	0	0	0	0	0	0	0	0
Ripley	11	0	0	0	4	0	0	0	0	0	0	0	0	0
St. Charles	7	0	0	5	16	2	2	0	0	0	0	0	0	0

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County	Coyote	Red Fox	Gray Fox	Bobcat	Raccoon	Virginia Opossum	Striped Skunk	Mink	Beaver	Muskrat	Weasel	Badger	River Otter	Black Bear
St. Clair	8	0	0	4	13	4	0	0	0	0	0	0	0	0
St. Francois	0	0	5	5	21	32	0	0	0	0	0	0	0	0
Ste. Genevieve	23	12	0	6	50	6	29	0	3	0	0	0	0	0
St. Louis	11	9	2	2	7	9	4	0	0	0	0	0	0	0
Saline	9	0	0	14	129	18	5	0	0	0	0	5	0	0
Schuyler	22	0	0	7	48	2	0	0	0	0	0	0	0	0
Scotland	18	0	0	4	46	11	0	0	0	0	0	0	0	0
Scott	0	0	0	0	0	23	0	0	0	0	0	0	0	0
Shannon	10	0	0	10	5	0	0	0	10	0	0	0	0	0
Shelby	3	0	3	3	132	3	0	0	0	0	0	3	0	0
Stoddard	0	0	0	0	0	0	0	0	0	0	0	0	15	0
Stone	13	0	0	0	7	0	0	0	0	0	0	0	0	0
Sullivan	27	0	0	6	12	15	6	0	0	0	0	0	0	0
Taney	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Texas	7	0	0	7	0	0	0	0	0	0	0	0	0	0
Vernon	31	0	0	8	82	8	0	0	8	0	0	0	0	0
Warren	17	6	0	3	14	2	0	0	0	0	0	0	0	0
Washington	14	6	0	6	17	14	0	0	6	0	3	0	6	0
Wayne	0	0	0	6	17	15	6	0	0	0	0	0	0	0
Webster	14	9	0	5	28	28	0	0	14	0	0	0	9	0
Worth	44	0	0	9	111	13	4	0	0	0	0	4	0	0

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County	Coyote	Red Fox	Gray Fox	Bobcat	Raccoon	Virginia Opossum	Striped Skunk	Mink	Beaver	Muskrat	Weasel	Badger	River Otter	Black Bear
Wright	13	0	0	19	39	6	0	0	0	0	0	0	0	0
<b>Statewide Index</b>	<b>19.5</b>	<b>1.4</b>	<b>0.6</b>	<b>5.0</b>	<b>42.4</b>	<b>7.0</b>	<b>1.9</b>	<b>0.0</b>	<b>1.0</b>	<b>0.2</b>	<b>0.02</b>	<b>0.1</b>	<b>1.0</b>	<b>0.2</b>